THE VALUE OF AN INDEPENDENT ROYAL AIR FORCE – BREAKING THE "OSCAR WILDE PARADIGM" IN BRITISH DEFENCE

BY

WING COMMANDER SHAUN HARRIS MBE RAF

A THESIS PRESENTED TO THE FACULTY OF
THE SCHOOL OF ADVANCED AIR AND SPACE STUDIES
FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIR AND SPACE STUDIES
AIR UNIVERSITY
MAXWELL AIR FORCE BASE, ALABAMA
JUNE 2010

APPROVAL

The undersigned certify that this thesis meets masters-level standards of research, argumentation and expression.

_____*Original Signed*_____

Dr Stephen Wright - Advisor 3 June 2010

_____ *Original Signed*_____

Dr Michael Grumelli – Reader 3 June 2010

DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

ABOUT THE AUTHOR

Wing Commander Shaun Harris was commissioned into the Engineering Branch at Royal Air Force College Cranwell in 1990. He completed a Bachelor of Engineering degree in Electronic Systems Engineering at the Royal Military College of Science, Shrivenham – part of Cranfield University – in 1993. Appointments commanding maintenance personnel engaged in the first and second-line support of Jaguar ground-attack aircraft followed. In 1998 he assumed command of a specialist operational test and evaluation team who designed avionics solutions for embodiment on small numbers of aircraft serving in combat. A tour commanding the Airframe Technician training school for enlisted personnel followed. During this tour, Harris deployed to the Middle East to take part in the initial phase of Operation TELIC (Operation Iraqi Freedom). In late 2003, he became the Senior Engineering Officer on an Operational Test and Evaluation Squadron, with responsibility for four different types of fast-jet aircraft and numerous weapons systems. A staff tour followed, as the Personal Staff Officer (Exec) to the Air Officer Commanding Number One Group, the UK's fast-jet air commander. On promotion to Wing Commander in 2007, Harris served as the Officer Commanding Forward Support in 904 Expeditionary Air Wing in Southern Afghanistan. He is a Distinguished Graduate of the USAF Air Command and Staff College. In June 2010, Wing Commander Harris is assigned to US CYBERCOM at Fort Meade, Maryland.

ACKNOWLEDGEMENTS

I would like to acknowledge several people who have been of tremendous help to me as I compiled this paper. I want to thank Colonel Robert Elhers USAF, whose infectious enthusiasm and knowledge of Royal Air Force history inspired me to explore the 1920s inter-service rivalry period. Similarly, Mr Richard Carpenter, Head of the Resource Management Hub at Headquarters RAF Air Command was very generous with his time discussing budgetary issues.

Special thanks go to Dr Stephen 'Wilbur' Wright for his patience and advice, which helped to guide me through the project.

Most importantly, my eternal thanks go to my mother, my wife and our four children, who have had to endure my absence and lack of contact too many times during the preparation of this paper. Their patience, love and understanding make it all worthwhile.

ABSTRACT

This study explores the continuing need for an independent Royal Air Force in UK defense. Prompted by suggestions in the UK media that the Royal Air Force should be disbanded, the author looks at how the Ministry of Defence should configure itself to deliver air power in an uncertain world. Central to the paper is the issue of resource constraints and how policy makers have to balance efficiency savings against operational effectiveness. Using organizational theory, the author demonstrates that the current UK defense structure is optimal for dealing with uncertainty. Growing personnel in independent Services cultivates different ways of thinking which, when combined in Joint teams on operations, delivers innovation and success. The theories prove that the existence of an independent RAF contributed to success in an uncertain world. However, the issue is whether the UK can afford the additional cost of independence. By exploring the last existential threat to the Royal Air Force, in the 1920s, the author derives enduring questions about independence that need to be answered. Each question is explored in the modern context, to determine whether the effectiveness gains produced by independence outweigh the potential efficiency saving of abolishing the junior Service. The author determines that the true value of Royal Air Force independence lies in the fact that airmen are brought up to think differently, without being constrained by subordination to another Service. This independent thought is vital for innovation and countering uncertainty in the UK's National Security environment. Without an independent RAF, policy makers' options are constrained and less focus will be placed on vital missions away from the line of troops or fleet, and on homeland air defense.

CONTENTS

Illustrations

Table

Introduction

Background

At 0850 on a mid-summer day in 2005, a young Islamic extremist detonated the suicide rucksack he was carrying on a crowded train underneath the streets of London. His actions and concurrent ones by others in his group ended the lives of 52 people and changed those of countless others forever.[1] The 7 July attacks confirmed that – despite the end of the Cold War and the success of the Northern Ireland peace process - physical threats to United Kingdom (UK) national security still exist. As with any major incident of this kind, the public demand for answers resulted in Government-led security reviews. Along with inputs from many other sources, lessons from the 2005 attacks informed the UK's first National Security Strategy – a strategy that advocates early engagement at home and abroad to tackle security risks.[2] Tragically, this was not the first time that a 7 July bomb attack on the UK's capital had generated headlines and forced a review of national security policy.

At 1145 on 7 July 1917, German Gotha bombers appeared above London for the second time in a month and commenced their attack. These aircraft were less vulnerable to fighters and anti-aircraft artillery than the Zeppelin airships previously favored by the Germans, so most of them successfully reached their targets. Although the casualty figure of 178 was lower than the Gotha raid on 13 June, the British people were incensed that their island fortress, defended by the Royal Navy (RN) for centuries, appeared to be so vulnerable.[3] The Times newspaper reported that, "the German air raid on London on Saturday has produced much anger in the public mind, and the Government must be prepared to face wide-spread indignation."[4] Increasing concern about the inadequacy of British air defenses, and a popular desire to retaliate against Germany, prompted the Imperial War Cabinet to initiate a security review.[5] Although Prime Minister David

---

[1] Rt Hon Paul Murphy MP, *Intelligence and Security Committee Report into the London Terrorist Attacks on 7 July 2005* (Norwich, UK: HMSO, May 2006), iii, 2.
[2] UK Cabinet Office, *The National Security Strategy of the United Kingdom: Security in an Interdependent World* (Norwich, UK: HMSO, March 2008), 7, 11.
[3] Frank Morison, *War on Great Cities: A Study of the Facts* (London, UK: Faber & Faber, 1937), 127-129 and A. Rawlinson, *The Defence of London 1915-1918* (London, UK: Andrew Melrose Ltd., 1924), 177, 178, 249.
[4] *Times (London)*, "The Bombing of London," 9 July 1917, 9.
[5] UK National Archives, CAB 23/3, Minutes of a Meeting of the War Cabinet held at 10, Downing Street, S.W., on Wednesday, July 11, 1917, at 1130 AM, 104.

Lloyd-George headed the review committee, its other member – South African General Jan C. Smuts – was the driving force behind the production of its reports. Recommendations contained in the *1st and 2nd Reports of the Prime Minister's Committee on Air Organization and Home Defence against Air Raids*, commonly known as *The Smuts Report*, resulted in the creation of the world's first independent air force on 1 April 1918.[6]

Smuts argued that British air power could no longer remain, "merely ancillary to naval and military operations," and that its efficient and effective employment was hampered by being, "subordinated to military and naval direction and conceptions of policy as the artillery is."[7] The key elements of his arguments were: "The air service…can be used as an independent means of air operations. Nobody that witnessed the attack on London on 11 July could have any doubt on that point. Unlike artillery, an air fleet can conduct extensive operations far from and independently of, both Army and Navy," and, "It is important for the winning of the war that we should not only secure air predominance, but secure it on a very large scale; and having secured it in this war we should make every effort and sacrifice to maintain it for the future. Air supremacy may in the long run become as important a factor in the defense of the empire as sea supremacy."[8]

Smuts' justification for Royal Air Force (RAF) independence has endured and the Service is rapidly approaching its centenary. However, as the examples above illustrate, the international security environment has changed dramatically over the last eighty years. Air power was an emerging concept for Smuts, who could only hypothesise about its potential. Experience gained from numerous conflicts since 1918 provides a clearer picture of the air weapon's utility and its limitations. Organisational structures that served Imperial Britain - or even struggling Cold War Britain – may have little relevance in the second decade of the twenty-first century. Conversely, the current UK force structure has maintained British territorial integrity and delivered operational success

[6] UK National Archives, CAB 23/3, Minutes of a Meeting of the War Cabinet held at 10, Downing Street, S.W., on Friday, August 24, 1917, at 1130 AM, 233.
[7] UK National Archives, CAB 23/3, Minutes of a Meeting of the War Cabinet held at 10, Downing Street, S.W., on Friday, August 24, 1917, at 1130 AM, Appendix II GT 1658, 234.
[8] UK National Archives, CAB 23/3, Minutes of a Meeting of the War Cabinet held at 10, Downing Street, S.W., on Friday, August 24, 1917, at 1130 AM, Appendix II GT 1658, 234, 235.

from WWII through Malaya, Korea, Borneo, the Falkland Islands, the Gulf War and Kosovo to Iraq 2003, so why change it? The most appropriate organizational structure for the delivery of UK air power is one that achieves the delicate balance between efficiency and effectiveness. The flexibility to deal with *all* contingencies is expensive, but too great an emphasis on efficiency could leave the UK cognitively and physically unprepared in an uncertain world. In the words of Oscar Wilde, there is a danger of knowing, "the price of everything and the value of nothing."[9] The independent RAF continues to provide the optimum balance between efficiency and effectiveness in an uncertain world, but inter-service rivalries driven by economic factors, muddy the waters for decision makers.

Why ask the Question?

On 3 February 2010, the UK Ministry of Defence (MOD) issued a green paper to stimulate national debate in advance of the latest strategic defense review.[10] At a press conference discussing the document's release, a reporter asked the Chief of the Defence Staff (CDS) – Air Chief Marshal Sir Jock Stirrup – if the UK would still have three separate armed services in ten years time. Newspapers interpreted his answer as heralding the demise of the RAF, because he did not categorically rule out an amalgamation.[11] The media undoubtedly misrepresented the head of Britain's armed forces, as he advocated a thorough review of overlap and inefficiencies in defense. However, reports had already re-fuelled discussions about RAF independence in Whitehall corridors, military barracks and the abodes of retired officers.

Numerous articles and letters advocating RAF abolition have appeared in newspapers and magazines over the last few years. For example, ex-Army officer Colonel Tim Collins, famous for his inspirational leadership in Iraq, wrote an article in 2006 arguing that, "There is only one service whose work can be undertaken by the other two: the RAF must go."[12] A *Daily Telegraph* editorial on 1 April 2008 wished the RAF a

[9] Oscar Wilde, *Lady Windermere's Fan, Act III,* 1892.
[10] A green paper is a tentative government report of a proposal without any commitment to action it. It is an ideas piece. Green papers tend to be statements by the government, not of policy already determined, but of propositions put before the whole nation for discussion.
[11] Ian Drury, Defence Correspondent, "Could this be the end for the RAF? Military chief refuses to rule out merger with Navy as cuts loom." *Daily Mail (London)*, 4 February 2010.
[12] Adam Lusher, Adam Stones and Jonathan Wynne-Jones. "Disband the RAF, says Iraq war's inspirational colonel." *Sunday Telegraph (London)*, 14 May 2006.

happy 90th birthday, but questioned whether spending on the junior Service was detrimental to its older siblings.[13] Somewhat predictably, in June 2009, retired Royal Naval officers called for the other Services to subsume the RAF, following Chief of the Air Staff, Sir Glen Torpy's proposals to take over naval flying.[14] Colonel Richard Kemp, who commanded The Royal Anglian Regiment in Afghanistan, joined calls for RAF disbandment in a November 2009 *Sunday Express* interview.[15] Regular anecdotes from members of the other Services about the RAF being a *100-year experiment* complete the picture. There has been more media focus on abolishing the RAF in the last few years than at any time since the 1920s – except for brief references during the 1998 Strategic Defence Review.[16] Interestingly, as in the 1920s, the UK today finds itself analyzing defense requirements against a backdrop of serious economic concerns and counter-insurgency operations overseas.

The arguments employed by contemporary advocates of RAF abolition are remarkably similar to those used in the inter-war period, which is why that period merits further investigation. Conversely, the junior Service's rebuttals have changed since Lord Trenchard's time. It is now rare to see independent strategic attack used as a raison d'être, or suggestions that the air force could control Iraq or Afghanistan on its own using air policing methods. In fact, it is difficult to find examples of RAF personnel justifying their independence at all – perhaps because they think the rationale is self evident, or they are choosing to maintain a *dignified silence*. However, the point that CDS was really making during the release of the 2010 *Defence Green Paper* was that, "vigorous and widespread debate," is required on all defense related issues, to inform the review process.[17] As Sir Winston Churchill is reputed to have said, "Gentlemen we have run out

---

[13] Allan Mallinson, "Does Britain want an independent RAF?" *Telegraph (London)*, 1 April 2008, http://www.telegraph.co.uk/comment/3556788/Does-Britain-want-an-independent-RAF.html (accessed 18 November 2009).
[14] *Telegraph (London)*, 14 July 2009, http://www.telegraph.co.uk/comment/letters/5525262/Abolish-the-Royal-Air-Force-to-make-the-Services-more-efficient.html (accessed 19 November 2009).
[15] *Sunday Express (London)*, "Forces Crisis? Get Rid of the Captain Darlings", 1 November 2009.
[16] Hansard, House of Commons Debate, 23 April 1998, volume 310, cc979-94.
[17] Ministry of Defence, "MOD sets the big questions for Strategic Defence Review," 3 February 2010, http://www.mod.uk/DefenceInternet/DefenceNews/DefencePolicyAndBusiness/ModSetsTheBigQuestionsForStrategicDefenceReview.htm (accessed 5 February 2010).

of money, now we must think."[18] In the context of a global economic crisis and serious financial pressures on British defense spending, every element of the MOD will ultimately stand or fall on its own merits.[19] It is time to review the issue of RAF independence, not simply as a rebuttal to critics, but to ensure that the organization moves into its next century proud, united and confident - or not at all.

Scope and Methodology

The first chapter of this work establishes that the UK needs air power to achieve its Defence Missions, and that the question is actually about the best organizational structure to deliver it. Organizational theory is employed to show that current MOD structures appear to be optimal for operations in an uncertain global security environment. However, if the UK can no longer afford to employ extant structures it has to take risk and find an appropriate balance between operational flexibility and affordability. Chapter Two shows that balancing operational flexibility and affordability really equates to the old military problem of balancing effectiveness against efficiency. The tension between some efficiency ideas imported from the commercial sector and military operations is explored. The conflicting influences on Government decision makers as they struggle to balance effectiveness and efficiency are discussed, including the impact of inter-service rivalries. Chapter Three investigates the last existential threats to the RAF, which occurred in the 1920s. The arguments employed are described, using primary source material, and the influence that factors discussed in Chapter Two had on decision- makers is exposed. The final chapter takes the arguments about RAF independence employed in the 1920s and extracts the key questions for the contemporary debate. By applying these questions to the contemporary RAF, through the lenses of efficiency and effectiveness, some reasons for continued independence are developed.

[18] The quote is attributed in many places to Sir Winston Churchill, but also to British Physicist Sir Ernest Rutherford, who first split the atom.
[19] Secretary of State for Defence, *Adaptability and Partnership: Issues for the Strategic Defence Review* (Norwich, UK: TSO, February 2010), 5.

Chapter 1

Organizing for Air Power

Significantly, none of the challengers to RAF independence listed above suggested that the United Kingdom could dispense with the air weapon. The need for air power is enshrined in UK joint doctrine, which states that it is, "an essential element in virtually all military operations."[1] Using a tactical example, in September 2006 the media widely reported leaked e-mail comments by Major James Loden of 3 Para in Afghanistan, describing RAF support as, "utterly, utterly useless."[2] Loden - criticized by the head of the British Army for his comments - later admitted that the message was an emotional outburst sent after a particularly difficult day. However, despite criticizing the RAF for some specific incidents, the infantry officer praised the contribution made by air power.[3] From the enemy perspective, a Taliban field commander recently commented: "Tanks and armor are not a big deal...the planes are the killers. I can handle everything but the jet fighters…"[4] The current head of the British Army has been quoted as saying that during his time as ISAF commander NATO would have been lost without air power.[5]

These are only contemporary examples, as few people would argue the utility of air power in conventional conflicts such as the Falklands War or both Gulf Wars. The question is not, therefore, one of air power's utility in British defense – it is one of how the armed forces should be organized to deliver it. The Government's 2010 green paper, in advance of the strategic defense review, lists their latest Defence Planning Assumptions. The document makes it clear that the review will consider whether current assumptions still reflect national interests, but those assumptions remain the starting

---

[1] UK Interim Joint Warfare Publication 3-30, *Joint Air Operations* (Swindon, UK: Joint Doctrine & Concepts Centre, October 2003), Chapter 2, Para 201.
[2] Kim Sengupta. "Army chief leaps to defence of UK's Afghan mission Leaked complaints from frontline officers fighting in Helmand are 'irresponsible'." *Independent on Sunday (London)*. 24 September 2006.
[3] James Meek, "In their minds, all they want to do is kill English soldiers" *Guardian Weekend (London)*, 14 October 2006 and Matt Barnwell, "Major attacks useless RAF in leaked e-mails," *Telegraph (London)*, 23 September 2006, http://www.telegraph.co.uk/news/worldnews/1529620/Major-attacks-useless-RAF-in-leaked-e-mails.html (accessed 19 November 2009).
[4] Declassified Taliban communications, detailed in briefing to USAF School of Advanced Air and Space Studies, Maxwell AFB on 13 April 2010.
[5] Chief of the Defence Staff, oral evidence to the House of Commons Defence Committee, 6 March 2007. http://www.publications.parliament.uk/pa/cm200607/cmselect/cmdfence/uc381-i/uc38102.htm (accessed 14 May 2010).

position for contemporary debates.[6] Consequently, the paper starts with a baseline assumption that UK defense needs air power - specifically the capabilities necessary to support extant military planning assumptions. The question, therefore, centers on what is the most appropriate organizational structure to deliver those capabilities – either with or without a third Service. First, we need to understand what makes one structure more *appropriate* than another in the contemporary defense environment.

Does Organizational Theory hold the answers?

Military organizations are used to employing theories during decision-making. At the gateway to military service, officer selection centers assess candidates' personal qualities against those theoretically present in successful military leaders.[7] In anticipation of battle, commanders and staff draw on theories of warfare, from Sun Tzu to Rupert Smith, to predict how events may unfold.[8] Organizational theory draws on many sociological, psychological and management disciplines to provide insight into the nature of organizations and their actions.[9] None of the research in the field can provide a pseudo-scientific template on which to base future UK armed forces structure. However, organizational theory can help us determine the criteria against which military organizational structures should be assessed. Of the many theories available, the ones with most utility in this context fall under the broad categories of organizational design and organizational behavior.[10] Organizational design relates to the use of organizational theory to predict which structures will perform well in specific environments.

---

[6] Secretary of State for Defence, *Adaptability and Partnership: Issues for the Strategic Defence Review* (Norwich, UK: TSO, February 2010), 8 & Annex B.

[7] Squadron Leader Robert W. Thompson, "Officer Qualities." *North Atlantic Treaty Organization, Research and Technology Organization, Meeting Proceedings 55, Officer Selection, Paper 24,* 2000. http://ftp.rta.nato.int/Public/PubFullText/RTO/MP/RTO-MP-055/MP-055-$$TOC.PDF (accessed 20 February 2010).

[8] General Rupert Smith is a retired British Army Officer, who commanded UN Forces in Bosnia and was DSACEUR from 1998 to 2001. In his book *The Utility of Force,* he develops the theory that industrial state-on-state warfare has been succeeded by *war amongst the people*. General Rupert Smith, *The Utility of Force – The Art of War in the Modern World* (New York, NY: Vintage Books, 2008), 5.

[9] Ali Farazmand, ed., *Modern Organizations: Theory and Practice* (Westport, CT: Praeger, 2002), 20.

[10] These broad definitions are not universally agreed within the field. Some use the term organizational studies or organizational science to encompass all elements and others see organizational theory and organizational behavior as two separate fields – rather than the later as a subset of the former (see John B. Miner, *Organizational Behavior: Foundations, Theories, and Analyses* (Oxford: Oxford University Press, 2002), 4). For the purposes of this work, the delineation is drawn between design and behavior as theories relating to each are used in more objective (structural) analysis or more subjective (behavioral) analysis, without much crossover.

Organizational behavior offers insight into how cultures and norms within organizations influence their interactions with external bodies. This second body of theories helps to explain the influence that inter-service rivalries have on the decision-making process and we will return to them later.

For organizational design to have any utility, in the context of this paper, it is important to select theories that have gained broad acceptance – preferably because of sound empirical research. Structural changes to national defense are too important to entrust to an immature hypothesis. We must also consider how the research methodology that underpins the theory affects its applicability to military problems. Traditional organizational theorists generally discount differences between the public and private sector in terms of how organizations *behave*.[11] However, there is less consensus about the applicability of theories derived from private company *performance* data to public applications.[12]

Classical organizational design studies invariably analyze private companies, offering an opinion on the success of their structures based on the company's relative performance in the marketplace.[13] The relevance of theories derived from these studies to public applications, where profit is not the measure of success, is open to debate.[14] Where the military is concerned, it is sometimes more important to complete the assigned mission, irrespective of the cost, especially if it relates to an existential threat. For example, the national focus during the Battle of Britain was not on the economic impact of aircraft production, but rather on the ability to replenish losses irrespective of the cost.[15] How then, is it possible to assume that an organizational structure delivering success for a *blue chip* company has any relevance in military applications? The answer is that we are not looking for neat structural templates, but simply a way of thinking that helps establish criteria against which to assess the relative merits of RAF independence.

---

[11] Hal G. Rainey, *Understanding and managing public organizations* (San Francisco, CA: Jossey-Bass, 1997), 55.
[12] Neil Carter, Rudolf Klein, and Patricia Day, *How Organisations Measure Success: The Use of Performance Indicators in Government* (London, UK: Routledge, 1995), 27, 28.
[13] Gene W. Dalton, Paul R. Lawrence, and Jay W. Lorsch, eds., *Organizational Structure and Design* (Homewood, IL: Richard D. Irwin, 1970) 2.
[14] Farazmand, *Modern Organizations*, 1-13.
[15] Richard Overy, *The Battle of Britain – The Myth and the Reality* (New York, NY: W.W Norton and Company, 2002), 36.

Our starting point is a broadly accepted, non-prescriptive organizational theory that appears to explain the current structure of UK defense organizations. Using the generic concepts expounded by this theory and exploring the main points of correlation and divergence from UK military reality, the key areas for consideration in the independence debate can be determined.

The only certain thing in warfare is uncertainty. As Clausewitz says, "War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty."[16] One of the keys to military success is the ability to overcome Clausewitz's *fog of war*. More recently, military theorist John Boyd – of OODA loop fame – expanded on the idea of exploiting uncertainty. Boyd's theories advocate constructing military organizations that maintain internal harmony and initiative in the face of uncertainty, thereby providing an advantage over enemies who cannot.[17] Chapter One of the latest UK *Defence Green Paper* is entitled, "The Context for the Future Defence Review: Uncertainty and Affordability," and the document contains numerous references to uncertainty, adaptability and cost.[18] Clearly, based on well-established military theory and UK Government focus, any structural design theory that we look at must address the issue of environmental uncertainty. Affordability is a consideration that sits at the heart of differences between the military and commercial organizations.

Contingency theory is widely regarded as having the greatest utility for organizational design, because of its longevity and the amount and quality of research on which it is based.[19] Some have even suggested that the theory has reached *normal science* status as a tool for analyzing the structure of organizations.[20] Contingency theory is of particular interest for military applications, because it relates the structure of

---

[16] Michael Howard and Peter Paret Ed., *Carl von Clausewitz - On War* (Princeton, NJ: Princeton University Press, 1984), 101.
[17] John R. Boyd, "Organic Design for Command and Control" from "A Discourse on Winning and Losing" presentation, August 1987. Reader produced for USAF School of Advanced Air and Space Studies course 600. Original May 1987 versions signed by Boyd available at http://www.danford.net/boyd/organic.pdf (accessed 3 May 2010).
[18] Secretary of State for Defence, *Adaptability and Partnership*.and Dalton, Lawrence, Lorsch, *Organizational Structure*, 1-16, and Jeffrey Pfeffer, *New Directions for Organization Theory: Problems and Prospects* (New York: Oxford University Press, 1997), 156, 201, John B. Miner, *Organizational Behavior: Foundations, Theories, and Analyses* (Oxford: Oxford University Press, 2002), 494.
[20] Farazmand, *Modern Organizations*, 32.

organizations to the environment in which they operate.[21] For our specific application, the attraction lies in core contingency theories, which examine organizational structures in the context of certainty or uncertainty in their operating environments. Theories developed by Lawrence and Lorsch in the late 1960s, and follow-on studies by them and others (often referred to as the Harvard studies), take a systemic approach and form the backbone of this work.[22] Aside from environmental uncertainty, their key theoretical concepts that relate to RAF independence – and the whole UK armed forces structure - are *differentiation* and *integration*. Lawrence and Lorsch's original definitions are as follows:

> "*Differentiation* … the state of segmentation of the organizational system into subsystems, each of which tends to develop particular attributes in relation to the requirements posed by its relevant external environment.
>
> *Integration* ... the process of achieving unity of effort among the various subsystems in the accomplishment of the organization's task."[23]

Slight modifications to the theorists' definitions, which they published in the same year, influenced further work in the field.

> "*Differentiation* is defined as the difference in cognitive and emotional orientations among managers in different functional departments, and the differences in formal structure among these departments.
>
> *Integration* is the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the environment."[24]

The relevance of these definitions to our consideration of RAF independence will become clearer as we explore contingency theory further.

At its most simplistic level contingency theory proposes that organizational success in an uncertain environment depends on greater *differentiation*. However, once that differentiation has occurred, success also depends on the organization having good *integration* between its new sub-elements.[25] In the context of the UK MOD, basic

---

[21] W. Richard Scott, *Organizations: Rational, Natural and Open Systems* (Englewood Hills, New Jersey:Prentice-Hall, 1981), 114.
[22] Farazmand, *Modern Organizations*, 32 and Miner, *Organizational Behavior*, 488-494.
[23] Miner, *Organizational Behavior*, 481.
[24] Dalton, Lawrence, Lorsch, *Organizational Structure*, 5.
[25] Dalton, Lawrence, Lorsch, *Organizational Structure*, 5-9.

contingency theory would advocate forming sub-elements with different cognitive and emotional orientations to cope with environmental uncertainty. There has been much debate in the field of organizational theory about what constitutes *uncertainty*.[26] Lawrence and Lorsch saw the important factor as whether *leaders*, and hence the organization, *perceive* the environment as being uncertain.[27] Since nations configure their defenses based on leader's perceptions of threats, this seems to be a reasonable approach for UK defense. After all, the current defense green paper paints a picture of what the Government recognizes as an uncertain world, which provides the context for considering organizational structures.

Leaders in British defense certainly envisage a, "complex and unpredictable security landscape."[28] At the macro level, therefore, the theory appears to advocate a *differentiated* Army, Navy and RAF, to deliver defense needs in the modern world. The RAF has even tried to explain its *different cognitive and emotional orientation*, in British Air Power Doctrine, using the concept of, "air-mindedness."[29] Admittedly, like General Hap Arnold - on whose words the document draws - doctrine does not fully explain what air-mindedness is, but the intent is to show that airmen think differently about warfare. In Arnold's own words, "Air-mindedness is much harder to convey than the perspectives of soldiers and sailors."[30] Differentiation and, hence, freedom to think in a different way is synergistic with Smut's opinion that airpower's development was hampered by subordination to other Services.

Turning to the second concept, contingency theory suggests that success depends on a high level of integration between differentiated sub-elements when *unity of effort* is important. Lawrence and Lorsch's studies led to the hypothesis that integration between highly differentiated sub-units is often more essential, but it is harder to achieve.[31] This is logical, given that it is easier for centrally controlled agencies working to the same corporate agenda to achieve unity of effort than sub-units predisposed to thinking in

---

[26] Miner, *Organizational Behavior*, 500.
[27] Miner, *Organizational Behavior*, 499.
[28] UK Cabinet Office, *The National Security Strategy of the United Kingdom: Update 2009 – Security for the Next Generation* (Norwich, UK: TSO, June 2009), 3.
[29] Air Staff, Ministry of Defence, *AP3000 – British Air and Space Power Doctrine – Fourth Edition* (London: Air Media Centre, HQ Air Command, 2009), 24.
[30]General H H 'Hap' Arnold, Commanding General US Army Air Forces, 1942-46.
[31] Dalton, Lawrence, Lorsch, *Organizational Design*, 9.

different ways – more of which later. A good example is the significant effort required to improve air/land integration in recent years. The need to focus on close air support in Iraq and Afghanistan brought the *sharp end* of the RAF and conventional British troops into the closest proximity since Aden 1964-67, or in some cases WWII.[32] Cognitive, cultural and organizational differences between the Army and RAF (differentiation) became even more evident when closer cooperation was required. As Brigadier Rob Weighill stated in a RUSI Air/Land integration paper, "The absence of trust and mutual understanding between soldiers and airmen is evident at certain levels."[33] Contingency theory predicts that additional *integration systems* are required when *unity of effort* between differentiated elements is so essential to success.[34] In a recent speech, the Commander-in-Chief UK Air Command highlighted the many additional integration measures put in place including: the Joint Air Land Organisation, Deployed Air Integration Teams and improved Joint pre-deployment training – coherent with predictions.[35] However, we need to delve deeper before drawing firm conclusions about the utility of contingency theory.

Up to this point, we have only considered environmental uncertainty as affecting all areas of the organization to the same degree. However, the optimal design for success in a large, complex organization has to accommodate activities of a more predictable nature as well as those steeped in uncertainty. So, what is the correlation between current MOD structure and basic contingency theory in work areas where more certainty exists? Lawrence and Lorsch advocate less differentiation, and hence sub-elements, with more of a corporate view than a *different cognitive orientation*. At the macro level, the manifestation of this in British defense are Defence Agencies and Organisations – centrally controlled entities that perform relatively procedural and predictable tasks,

---

[32] James S. Corum & Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence, Kansas: University Press of Kansas, 2003), 206, 207.
[33] Brigadier Rob Weighill, "Air/Land Integration – The View from Mars", *RUSI Defence Systems*, February 2009, 53.
[34] Dalton, Lawrence, Lorsch, *Organizational Design*, 9.
[35] Air Chief Marshal Sir Christopher Moran, Commander-in-Chief UK Air Command, "Sir Sydney Camm Lecture 2009" (lecture, Royal Aeronautical Society, 1 July 2009). Transcript at http://www.raf.mod.uk/rafcms/mediafiles/79E7D4A9_5056_A318_A8FECDC85BBA26B8.doc (accessed 23 March 2010).

when compared to preparing for or engaging in combat.[36] The high proportion of civilian staff within these areas also reinforces the lack of cognitive or emotional allegiance to individual Services.

However, what about non-differentiated sub-units, like Defence Agencies and Organisations and their integration with the differentiated Services? Neither Lawrence and Lorsch's work, nor that of their successors provides much advice in this area, other than to emphasise that it is easy to integrate sub-units that are less differentiated.[37] It is, however, consistent with the general theory to infer that agencies and organizations needing to have greater unity of effort with the differentiated Services have to establish more integration methods. This is corroborated in practice, as those centralised bodies that must cooperate closely with the Services to ensure that operational outputs are maintained have a strong contingent of embedded Army, Navy and RAF staff – in effect, liaison elements. For example, Defence Equipment and Support, which manages Joint acquisition and through-life support for military equipment, has approximately 30% military manpower.[38] Organizations that interact with individual Services, but have outputs that do not need to be closely coordinated have fewer requirements for integrators, in accordance with contingency theory. The Defence Vetting Agency, which carries out security clearance investigations, has no serving military staff.

Having established the correlation between differentiation and integration theories and the current UK defense structure, it is important to look at another element of contingency theory that some may consider offers an alternative to this analysis. In 2002, a team of Michigan State University researchers, led by John Hollenbeck, published a contingency theory based study that appears to point to a different solution for the delivery of UK airpower.[39] Hollenbeck's work looked at the dynamics within teams

---

[36] Ministry of Defence, "Agencies and Organisations", http://www.mod.uk/DefenceInternet/AboutDefence/Organisation/AgenciesOrganisations/ (accessed 6 May 2010).

[37] Miner, *Organizational Behavior*, 482.

[38] Defence Analysis and Statistics Agency, "UK Defence Personnel Overview", http://www.dasa.mod.uk/modintranet/dp/index.php?c=2&s=1&l=english&m=english (accessed 23 March 2010).

[39] Hollenbeck, J. R., Moon, H. Ellis, A . P. J., West, B. J., Ilgen, D. R., Sheppard, L., Porter, C. O. L. H., & Wagner, J. A. (2002). "Structural contingency theory and individual differences: Examination of external in internal person-team fit." *Journal of Applied Psychology, Volume 87, Number 3*, 599.

when faced with certain or uncertain environments, but it also offered some insight into organizational structures. Of particular interest, however, is that the researchers used a computer simulated military exercise as a vehicle for their studies. An evolution of contingency theory was employed, which looks at the difference between sub-units that are configured based on function and a move division based approach, where sub-units contain specialists in many functional disciplines. This theory, advanced by Lorsch and Allen and endorsed by Pennings in 1992, states that divisional structures tend to offer the best performance in uncertain environments.[40] To the casual observer, this may appear to indicate that a totally combined armed force, without individual Services is actually the preferred structure. At lower levels of the organization, the theory could be interpreted as advocating distributing RAF assets to the other two Services - as many of the media contributors mentioned earlier in this paper have proposed. Both observations, however, are incomplete.

Hollenbeck's study required participants to keep enemy forces out of four geographic areas in the computer simulation, while allowing freedom of movement for friendly forces. Friendly forces had at their disposal AWACS aircraft, tanks, helicopters and jets. During the war game, teams were either given a region to defend with elements from all four asset types (a divisional structure), or a complete team of one asset type to play their part in defending the whole world (a functional structure). The researchers simulated various uncertainty levels by altering the settings on a random number generator that controlled the predictability of enemy movements, appearance times and ease of identification as friend or foe, ground or air.[41]

Results demonstrated that teams organized into divisional systems were more successful at countering the enemy when uncertainty levels were high but in predictable environments, functionally structured teams performed better – validating contingency theory.[42] However, this does not amount to a contradiction of the Lawrence and Lorsch type model discussed above, despite its appearance to casual observers. It is important to remember that Lorsch and Allen's work supplemented earlier differentiation and integration based theory, by including discussion about divisional structures – it did not

[40] Miner, *Organizational Behavior*, 482-483 and Hollenbeck et al., "Structural contingency theory", 600.
[41] Hollenbeck et al., "Structural contingency theory", 601-602.
[42] Hollenbeck et al., "Structural contingency theory", 604.

invalidate it.[43] Hollenbeck's participants were not military strategists or specialists in operating aircraft or tanks, but the game allowed them to specialise quickly, because the assets were easy to operate. Although the enemy could be unpredictable in the game, it did not adapt to counter friendly actions, as a real adversary would. In reality, the specialists within a divisional structure have to be *grown*, to gain the full collaborative benefits when they enter the multi-disciplinary group.

As Lawrence and Lorsch's original theories show, *differentiation* generates the innovation required to tackle uncertainty - in this case, individuals with *different cognitive and emotional orientations*. The divisional structure is actually an excellent *integration* system that facilitates optimum performance by *differentiated* participants in particularly uncertain environments. As John Miner states, in a summary of contingency theory, "Highly uncertain environments require high degrees of differentiation and integration for effective performance."[44] Hollenbeck's work actually validates the requirement for *differentiated* preparation of forces – *growing different cognitive orientations* – but integrating using a divisional approach during war-fighting.

This structure mirrors the current arrangements in the UK, where single Services organize and train forces, but hand them over to the Commander Joint Operations for employment.[45] Similarly, single Services in the US organize, train and equip forces but present them for employment as a Joint Force. It is worth reiterating at this point that growing personnel with *different cognitive orientations* is critical to success in an uncertain environment, according to contingency theory – we will return to this concept later. This theory also show that the strength of Jointery is a bringing together of Services who think differently – if all individuals have grown up to think the same the benefits are reduced.

Given the current UK defense organization appears to approximate the structure recommended for success by contingency theory, why should the Government even consider reconfiguring the armed forces? The answer lies in what was earlier referred to as the heart of difference between military and commercial organizations – affordability.

---

[43] Miner, *Organizational Behavior*, 482.
[44] Miner, *Organizational Behavior*, 482.
[45] UK Ministry of Defence, *Joint Doctrine Publication JDP 01, Second Edition* (Swindon, UK: Defence Doctrine and Concepts Centre, 2008), 2A-6 and 2A-7.

In an uncertain world, contingency theory recommends a highly differentiated structure, with numerous integrating elements between those sub-units that require unity of effort. The problem is that maintaining differentiated sub-units costs more than a streamlined, centralized organization. Contingency theory recommends a more centralized structure as the route to success when the task is more predictable. It is important to remember that the original theories relate to success in the business world, which means maximizing profits. A centralized structure is more successful, if predictability allows you to take that route, because it is more efficient, creating a greater profit margin. Differentiation provides greater opportunities for innovation to tackle uncertainty, but it comes at a price. At the very least, each sub-unit is likely to have a leadership and administrative support overhead. In his previously mentioned media article, Colonel Tim Collins highlighted what he considered to be, "vast savings on infrastructure, senior officers and staff," that would come from abolishing the RAF and dividing its tasks between the Army and Navy.[46] The actual savings that may result will be derived later in this paper.

The cost of differentiation highlights a fundamental difference between the application of contingency theory to profit making organizations and the military. For a business, if differentiation leads to improved performance and, hence, greater profits, it can afford to cover the excess cost – the cost/benefit equation is still in its favor. Differentiation may not lead to the most efficient structure, but if it generates a better profit margin in an uncertain environment, the cost is largely unnoticed. However, the military does not generate profits, so even though differentiation enhances flexibility and performance in an uncertain world, it costs more and does not generate a financial offset. As we will discuss later, it may be important for the military to win at all costs – finishing in second place is losing in warfare. A business will centralize elements that operate in predictable environments to maximize profits, but there is no incentive to reduce differentiation in areas where uncertainty exists, provided those sub-units are generating sufficient capital. For the MOD, there is always an incentive to reduce differentiation, thereby making the organization affordable, even at the expense of flexibility in uncertainty. Differentiation and, hence, an independent RAF may be the right answer -

[46] Adam Lusher, Adam Stones and Jonathan Wynne-Jones. "Disband the RAF, says Iraq war's inspirational colonel." *Sunday Telegraph (London)*, 14 May 2006.

as contingency theory suggests - but as resources diminish the question is actually whether it is an affordable answer. The decision for Government ministers becomes how much risk they are prepared to take in terms of reduced flexibility in order to reduce defense spending. In short, the decision whether or not to maintain an independent RAF is a matter of balancing effectiveness against efficiency.

Chapter 2

Influences on Decision-Makers

Effectiveness and Efficiency

The debate about RAF independence forms part of a wider discussion about UK National Security requirements versus costs. Using the terminology referred to in the previous paragraph, it is a question of balancing *effectiveness* against *efficiency*. It is important to pause at this point to consider what these words really mean. In the military context, the words are closely inter-related and authors sometimes use them interchangeably – but they are not interchangeable. Perhaps misuse occurs because the word *efficiency* has negative connotations among members of the armed forces who have lived through numerous cost-cutting exercises – better to talk in terms of a new initiative making the military more operationally *effective*. However, Oxford English Dictionary definitions provide us with the following insight:

> "**Efficiency**: 1. the state or quality of being efficient."
>
> "**Efficient**: 2. productive with minimum waste or effort."
>
> "**Effective**: 1. having a definite or desired effect. 2. powerful in effect; impressive. **effectiveness** *n*."[1]

Drawing from these definitions, we can determine appropriate descriptions to use throughout the remainder of this work:

> "**Efficiency**: Having sufficient resources to perform the task, with waste and effort kept to a minimum."
>
> "**Effectiveness**: Being able to carry out the task exactly as required."

Efficiency involves doing the minimum that needs to be done, but not at the cost of more waste or expense than are absolutely necessary. It carries with it the risk that the task may not be achieved in its totality, especially if circumstances change and previously adequate resources no longer suffice. Efficiency creates the greatest risk in an uncertain environment, where it is difficult to determine the task and, hence, the resources required to achieve it. Perfect efficiency, therefore, leaves little flexibility to deal with unexpected contingencies – increasing the risk of mission failure. In the context of contingency

[1] R. E. Allen ed., *The Concise Oxford Dictionary of Current English* (Oxford, UK: Oxford University Press, 1993).

theory, centralization increases efficiency, provided the environment is predictable. Effectiveness does not include the concept of waste and is more fixated on achieving the task. It suggests that the task will always be completed, but at the risk of considerable resource cost. Guaranteed effectiveness in an uncertain environment requires an allocation of resources to numerous contingencies. This will ensure that the actual task, when it emerges, is resourced for success. Perfect effectiveness, therefore, has plenty of flexibility to deal with anything – but at considerable cost. In contingency theory terms, we can equate this with the impact of differentiation, which provides a greater capacity to deal with uncertainty, but at a cost.

The definitions of efficiency and effectiveness can be used to expand on discussions in the previous section about differences between commercial businesses and the military. Everything for a business ultimately comes down to economics – its ability to make a profit defines its very existence. Overall, a company needs to be efficient, with waste reduced to a minimum, so that profit margins are maximised. It may seek greater effectiveness, so that its high performance products capture more of the market, but not if the corresponding cost drives profit margins down – that would be self-defeating. As seen in our contingency theory discussions, companies can only tolerate possible inefficiencies (like differentiation) if they result in additional profit that justifies the investment. A typical example would be a research and development department, which only justifies the cost of experimentation if some of it leads to profit generating breakthroughs. Even in human resource areas, companies want their employees to be satisfied so that they perform optimally for the company, translating into greater profits – it is not a charity. The point is that the cognitive bias in a successful commercial business is weighted towards efficiency – ensuring maximum return for minimum investment.

In the military context, the stakes can be so high that governments have to minimise the risk of failure – the survival of the nation, or at least its way of life may depend on success. When effectiveness is so important, capabilities may have to be purchased that will never be used – the epitome of waste in the commercial sector. Nuclear weapons are a prime example of this type of investment. Despite arguments about nuclear forces being cheaper than conventional ones, a commercial company would be reluctant to invest that heavily in an insurance-type capability. UK and European

Health and Safety Legislation were enacted specifically to counter that type of reluctance in the business community.[2] Even with the threat of legal action, some companies still minimise investment in fire and safety equipment (insurance-type capabilities) because of their cognitive drive to maximise profit. In short, they choose not to invest adequately in mitigating the risk of accident to reduce expenditure. Of course, if an accident happens, or if the Crown prosecutes them for legal non-compliance, the consequences invariably outweigh what they would have had to invest in prevention. There have been nearly 200 successful prosecutions of businesses in the UK for serious non-compliance in the last five years, not to mention the thousands of lower level actions.[3] This balancing of risk against cost equates to decisions about military expenditure. As we will see when we look at the UK Government's defense responsibilities in more detail, deciding where to accept risk, – an integral part of balancing effectiveness against efficiency – is one of the most difficult choices to make. A wrong decision can have even more serious consequences in terms of National Security than it does for commercial businesses. Clearly, the armed forces have a duty to taxpayers not to be wasteful (efficiency), but the nature of their business – especially in an uncertain world – generates a cognitive bias towards effectiveness.

Since its reorganization, after the 1994 Fundamental Spending Review, one of Her Majesty's Treasury's specific aims has been to maintain, "a financial control system which delivers continuing improvements in the efficiency of Government."[4] Every Government spending review since has set further efficiency targets for departments, including – of course – the MOD.[5] The Operational Efficiency Programme is one of the latest initiatives with a stated aspiration of learning from, "best practice in the private sector and spread[ing] best practice in the public sector".[6] It is clear to see that a tension exists between Treasury managed *efficiency* programs and guidance given to the military

---

[2] David A. Hofmann and Lois E. Tetrick, eds., *Health and Safety in Organizations: A Multilevel Perspective* (San Francisco: Jossey-Bass, 2003), 373-379.
[3] United Kingdom Health and Safety Executive Statistics. http://www.hse.gov.uk/prosecutions/breach/breach_list.asp?PN=1&ST=B&EO=%3D&SN=P&x=41&SF=ACT&SV=491&y=21&SO=DHD (accessed 8 May 2010).
[4] Richard A. Chapman, *The Treasury in Public Policy-Making* (London, UK: Routledge, 1997), 72.
[5] HM Treasury, "Spending Reviews, 1998-2007". http://www.hm-treasury.gov.uk/spend_index.htm (accessed 5 May 2010).
[6] House of Commons Treasury Committee, *Evaluating the Efficiency Programme – Thirteenth Report of Session 2008-09* (London, UK: The Stationary Office, 2009), 15.

which will require *effectiveness* in a "complex and unpredictable security landscape."[7] Finding the right balance between competing requirements and managing cognitive differences between Treasury and armed forces perspectives is a serious challenge for the Government. As the House of Commons Treasury Select Committee stated during a recent inquiry into efficiency initiatives: "Despite Government commitments to maintain quality, throughout the inquiry we heard various organisations [government departments] express concerns about the impact of efficiency on service provision."[8] The issue of RAF independence is caught in the middle of the Government's efficiency versus effectiveness balancing dilemma.

Government and the Efficiency versus Effectiveness Dilemma

Changes in the international security situation, national economics and public expectations – to list but a few factors – mean that nobody can state with any certainty what challenges the UK armed forces will face in the future. When the Berlin wall fell in 1987, who would have thought that within four years a sizeable proportion of Britain's Cold War defensive forces would be engaged in conventional combat in the Middle East? Today's middle-ranking officers returned from school or university lectures in 1989 and saw Soviet forces leaving Afghanistan on their television sets. Would any of them have guessed that their generation would be commanding counter-insurgency operations in the same desolate landscape? However, one enduring factor, as highlighted by the London bombing examples in this paper's introduction, is the expectations of the British public. Although 88 years separated the two bomb attacks and the international security environments were vastly different, public expectations in the aftermath were the same – that their Government would protect them.

Robert Gilpin astutely points out that, "provision of security for its citizens both at home and abroad is the primary function of the state; no other institution can relieve it of this responsibility."[9] The opening sentence of the current UK National Security Strategy reiterates this assertion by confirming that, "Providing security for the nation,

---

[7] UK Cabinet Office, *The National Security Strategy of the United Kingdom: Update 2009 – Security for the Next Generation* (Norwich, UK: TSO, June 2009), 3.
[8] Treasury Committee, *Evaluating Efficiency Programme*, 25.
[9] Robert Gilpin, *Global Political Economy: understanding the international economic order* (Princeton, NJ: Princeton University Press, 2001), 45.

safeguarding our citizens and our way of life, remains the most important responsibility of government."[10] However, other key governmental responsibilities, particularly in a democracy, are the promotion of citizens' social and economic welfare.[11] For example, the UK Treasury's aim is to, "raise the rate of sustainable growth, and achieve rising prosperity and a better quality of life with economic and employment opportunities for all."[12] No nation has unlimited resources, so it is inevitable that tension will arise between these goals. There is an opportunity-cost associated with the provision of security, which has an impact on other government programs and the wealth of citizens, who pay for the military through taxation.

Democratic governments perceive increases in taxation as unpopular with the electorate, risking the ruling political party's chances of re-election. Less cynically, lower taxation stimulates growth in the national economy, with individuals having more money to spend.[13] If a spending increase is required in one area, HM Treasury's natural reaction, before exploring increased taxation, is to look for a compensating decrease in other areas. For a fixed level of taxation, the distribution of funding between different governmental departments is largely a zero-sum game. The public – and, hence, their political representatives' – appetite for spending more in one area than another depend on the actual or perceived impact on their lives. The focus on different areas follows a Maslow-like hierarchy, where under-pinning needs, like security, only have spending primacy when they are threatened.[14] These factors are at the very heart of efficiency versus effectiveness decisions with respect to the armed forces. At one end of the spectrum, having the most effective military fulfils the Government's security commitments. However, the cost of such an organization would adversely affect other Government spending. Maximizing efficiency in the military reduces waste and provides more financial capital to invest in other areas. However, rigid efficiencies based on a military configured for a specific role mean that it will lack the resource flexibility to meet an unexpected threat – putting Government security responsibilities at risk.

---

[10] Cabinet Office, *Security for Next Generation*, 5, 17.
[11] Gilpin, *Global Political Economy*, 45.
[12] HM Treasury, "About us", http://www.hm-treasury.gov.uk/about_index.htm (accessed 23 March 2010).
[13] Eric Engen & Jonathan Skinner, "Taxation and Economic Growth," *National Tax Journal (Vol 49 No. 4, December 1996)*, 617-642.
[14] A.H. Maslow, "A Theory of Human Motivation, " *Psychological Review*, vol. 50, 1943, pp. 394-395.

When there is a real – or widely perceived – existential threat to the nation, it is easier to justify increased security spending. Voters will accept reduced benefits in other areas, because their personal survival or freedoms are linked to national survival. Wealth and education are of little consequence if a tyrannical regime is about to over-run your country. Examples are British defense spending during the First and Second World Wars, which left a virtually bankrupt, heavily indebted nation – but a free and democratic one. National debt by the end of WWII was the highest Britain has ever experienced, equating to 250% of the Gross Domestic Product.[15]

Conversely, when the populous do not perceive an existential threat, spending on defense appears to be an inefficient luxury that reduces the social and economic welfare of families. Without the need for high levels of defense spending, education and health-care could have more resources for the same level of taxation. A prime example was the public expectation of reduced defense spending and more investment in other public services at the end of the Cold War – the so-called, *peace dividend*. When directly challenged in 1991 about the savings achieved, the Secretary of State for Defence estimated that the peace dividend equated to at least a ten percent reduction in Britain's military.[16] So, if there is no threat, military spending is nugatory and, therefore, detrimental to the nation, is it not?

If it were possible to guarantee that no future threats would emerge and that the UK Government's sole rationale for maintaining an armed force was to counter direct threats, the statement would be correct. However, as previously highlighted in this paper, we live in an uncertain world, where it is impossible to guarantee the absence of threats in perpetuity – more of which later. It is also important to highlight at this juncture that governments do not maintain forces simply to defend against threats. It is worth recalling Thucydides' view of the rationale behind using military force – fear, honor and interest.[17] Threats fall into the *fear* category, but it is worth taking a brief sojourn into the other two areas before we continue.

---

[15] UK Debt Management Office figures. http://www.dmo.gov.uk/index.aspx?page=About/treasury_history, (accessed 20 April 2010).
[16] Hansard, House of Commons Debate, 30 April 1991, Volume 190, cc147-148W.
[17] Robert B. Strassler ed. *The Landmark Thucydides – A Comprehensive Guide to the Peloponnesian War* (New York, NY: Free Press, 1996), 43.

The military is a key enabler for foreign policy objectives linked more closely to furthering the prosperity and quality of life of the populous – more akin to Treasury aims. The UK Defence Vision states that the MOD aims to be a, "force for good in the world," – a phrase coined by the Government when it entered power, and still an aspiration to which the armed forces contribute. [18] Foreign Secretary Robin Cook MP explained the basis for the current UK Government's foreign policies in a 1997 speech, which contained all of the classic Thucydides elements:

Fear - "The first goal of foreign policy is security for nations."

Interests - "The prosperity of Britain is the next goal of our foreign policy. More people than ever before in Britain's long history as a trading nation depend on our exports to other countries or on investment from them into our own country."

Honor - "The forth goal of our foreign policy is to secure the respect of other nations for Britain's contribution to keeping the peace of the world and promoting democracy around the world."[19]

The success of the last policy objective over the intervening years has been widely debated in the media, because of international perceptions about the UK's involvement in Iraq. However, in addition to that type of operation, Military Tasks 3.4 and 4.1 encompass the, "Support of Wider British Interests," and "Humanitarian Aid and Disaster Relief," to support the Foreign and Commonwealth Office or the Department for International Development.[20] Through these tasks, the armed forces contribute to the *interests* element of foreign policy. The problem is that this contribution is sometimes difficult to quantify and easy to discount when balancing efficiency against effectiveness.

It is relatively simple to show how military assistance in defense export sales brings wealth into the country, boosting the economy and benefiting citizens. However, the links between other activities, such as disaster relief or security cooperation are less easily defined. For example, RAF personnel – as operators of the aircraft – provided

---

[18] UK Defence Vision. http://www.mod.uk/DefenceInternet/AboutDefence/Organisation/DefenceVision/ (accessed 9 May 2010).

[19] Rt Hon Robin Cook MP, Foreign Secretary, "Ethical Foreign Policy" (Speech, UK Foreign Office, 12 May 1997). http://www.guardian.co.uk/world/1997/may/12/indonesia.ethicalforeignpolicy (accessed 9 May 2010).

[20] Secretary of State for Defence, *Adaptability and Partnership: Issues for the Strategic Defence Review*, (Norwich, UK: TSO, 2010), 48.

specialist advice within the Defence Export Sales Organization, which helped to secure the sale of Typhoon aircraft to Saudi Arabia. The link between this military contribution and the likely £20 billion income into Britain, securing many jobs, is simple to make.[21] However, it probably has little utility in our discussions, as no government could justify maintaining a large element of its armed forces simply to secure arms sales to other countries. The more important, but not easily quantifiable, contribution that the UK armed forces make to British strategic interests are in fostering improved relationships with other countries.

Actions, like disaster relief, that lead nations to see the UK in a more favorable light can lead to more attractive trade deals or support for the British position in international institutions. More income into the country and a stronger position on the world stage can translate into a better standard of living for the British people. That is not advocate a view that the UK Government conducts tasks like Humanitarian Aid and Disaster Relief primarily out of self-interest. However, it is important to recognize that there can be second and third order diplomatic and trade impacts that benefit Britain. Regrettably, there is a tendency to prefer quantitative evidence (statistics) in modern Government decision- making, rather than qualitative justification based on military or diplomatic opinions. However, the subtleties of inter-personal relationships cannot be transferred to a balance sheet, so they are easily discarded in efficiency debates. We return to Oscar Wilde's statement about knowing, "the price of everything but the value of nothing."[22] It is important to remember when efficiency targets are set that the structure and capabilities of the armed forces benefit more than just security objectives. We will now return to discussing core military tasks.

It is not always evident *when* threats to national security will emerge or *where* they will come from. Just because no obvious threat exists today, does not mean that there will not be one tomorrow. For example, in late 1981 few people in the UK had even heard of the Falkland Islands and a defense review had decided to reduce expeditionary naval capability. Less than a year later, the nation had fought a significant

[21] David Robertson, Business Correspondent, "Eurofighters head towards Saudi Arabia as BAE completes £4.4bn order", *Times (London)*, 17 September 2007. http://business.timesonline.co.uk/tol/business/industry_sectors/engineering/article2477461.ece (accessed 10 April 2010).
[22] Oscar Wilde, *Lady Windermere's Fan, Act III*, 1892.

conflict over the territories and the Government had to re-evaluate the future composition of the RN.[23] That is not to say that the findings of the 1981 Defence Review were incorrect within the context of the time – the point is that future threats and, hence, defense needs are notoriously difficult to predict. Different threats often require different capabilities to counter them and – as discussed in previous paragraphs – there is an opportunity-cost associated with training and equipping an armed force for every possible contingency.

Effectiveness against every possible threat costs, but too much efficiency introduces more risk. For example, a force solely trained and configured for light-infantry counter-insurgency – the threat of the moment – is not equipped to fight Operation Desert Storm type tank engagements. If the military maintains sufficient forces trained and equipped to do both, the cost is greater and less funding is available for other government departments. Policy makers must decide what type of threats they want to be able to counter and where they will accept risk. Clausewitz identifies calls this, "the most far-reaching act of judgment that the statesman and commander have to make…establish[ing] the kind of war on which they are embarking."[24] If Rupert Smith is correct then state-on-state warfare is outdated and all future conflicts will be, "war amongst the people."[25] However, does the Government want to bet the security of the nation – its foremost responsibility – on that theory?

Configuring solely for the type of warfare that Smith, and others, prophesize certainly appears to be more *efficient*, based on contemporary operations. However, would it provide the flexibility to be *effective* if a different threat emerged in ten years time? In contrast to Smith's thesis, Colin Gray proposes that the contemporary operational environment is untypical, suggesting a possible return to state-on-state conflicts.[26] The Government has to balance these considerations and determine how

---

[23] Roger Jackling, "The Impact of the Falklands Conflict on Defence Policy," in *The Falklands Conflict Twenty Years on: Lessons for the Future* ed. Stephen Badsey, Rob Havers, and Mark Grove (New York: Routledge, 2004), 239-243.
[24] Michael Howard and Peter Paret Ed., *Carl von Clausewitz - On War* (Princeton, NJ: Princeton University Press, 1984), 88.
[25] General Rupert Smith, *The Utility of Force – The Art of War in the Modern World* (New York, NY: Vintage Books, 2008), 5.
[26] Colin S. Gray, *Strategy for chaos: revolutions in military affairs and the evidence of history* (London, UK: Frank Cass, 2002).

much risk it is prepared to take in certain areas. This recognition is certainly present in the 2009 addendum to the UK National Security Strategy, which states that the, "traditional focus of threats to the state and its interests from other states…are still important."[27]

Her Majesty's (HM) Treasury's advice on managing public risks indicates that government ministers will try to base all of its risk management decisions on relevant evidence. Specifically, the Government, "will consider evidence from a range of perspectives, including the public as well as experts. It will not use the absence of evidence alone to prove the absence or presence of threat, and will acknowledge alternative interpretations of the available evidence."[28] Efficiency measures can be taken based on intelligence assessments about future threats. If it is assessed that a potential adversary will take x-years to create a threatening capability, but it will only take x-1 years to develop counter-measures it may be reasonable to accept some risk. All that is required is one year's notice of the availability of the enemy's capability to be able to defend against it. Consequently, the most efficient course of action may be to delay spending on the counter-measure, use intelligence to monitor the situation and plan to reconstitute the nation's counter-measures within one year. This type of thinking led to the ten-year rule on defense spending in the 1920s, which will be discussed later.

However, many modern defense capabilities take far longer than one year to establish. It is generally possible to re-constitute a capability that the military removes today for reasons of economy. However, the lead-time to re-establish, in terms of equipment and training, could present a significant risk if intelligence-led assumptions are wrong. It is important, therefore, to take into account two elements in risk management considerations – likelihood of the event occurring and severity of the consequences. The consequences may not be actual death or destruction; they could be the political or diplomatic consequences of being unable to provide security. Even though intelligence suggests an event is unlikely, the Government may consider the likely political or diplomatic backlash if it did such a threat to national interests that the military has to insure against it. Colin Gray interprets Thucydides' *honor* criteria as national

[27] Cabinet Office, *Security for the Next Generation*, 5.
[28] The Cabinet Office and HM Treasury, *Principles of Managing Risks to the Public*. http://www.hm-treasury.gov.uk/d/Risk_Principles_with_logos_final.pdf, (accessed 3 April 2010).

reputation.[29] Considerable damage could be done to the UK's reputation, and consequently to its international influence and economic interests, if the Government appeared incapable of providing security for its citizens in their homeland.

From the end of the Cold War to the destruction of the twin towers, few people would have argued that there was a serious risk of the UK mainland being attacked from the air. Based on threat intelligence, perhaps the Government would have been justified to introduce a rolling ten-year delay in their decision to purchase a replacement air-defense aircraft. The Eurofighter Typhoon was still on the drawing board and the UK had not made any commitment to purchase. What if the Government accepted the small risk of not being able to defend UK airspace and reduced Tornado F3 numbers to a small cadre capable of providing a deterrent in the Falkland Islands. It would have seemed impossible, as it perhaps still does, that any expeditionary operation against a nation with a credible air-to-air threat would be conducted without US air-superiority fighters.

However, imagine first the scenario where intelligence identifies a potential threat to UK airspace that is ten years away from being deployed. Between the wars, that period of notice may have been perfectly acceptable. The lead-time for aircraft production and personnel training was such that the country could prepare for and militate against a threat identified ten years out. Within five years of the design requirement for the Hurricane being issued, over 2000 of the aircraft had been built and thirty-two squadrons were operational.[30] In contrast, it took nearly twenty years from the design stages of Typhoon until the aircraft assumed UK air defense responsibilities.[31] Following the 11 September 2001 attacks on the US, other NATO nations began to think about protecting their own airspace from terrorist controlled aircraft. Imagine the reputational consequences if the UK had had to ask another NATO country for protection, because it no longer had the necessary capabilities. On 17 August 2007, RAF

---

[29] Colin Gray, "Britain's National Security: Compulsion and Discretion", *RUSI Journal (Vol. 153, No. 6, December 2008)*, 15-16.
[30] Derek Wood, and Derek D. Dempster, *The Narrow Margin: The Battle of Britain and the Rise of Air Power 1930-40* (London: Hutchinson, 1961), 87-89.
[31] Janes, *All the World's Aircraft*, "UK, Eurofighter Typhoon", http://www4.janes.com/subscribe/jawa/doc_view.jsp?K2DocKey=/content1/janesdata/yb/jawa/jawa0478.htm@current&Prod_Name=JAWA&QueryText=#toclink-j0010120062334, (accessed 12 April 2010).

Typhoons intercepted a Russian Bear-H aircraft heading into UK airspace.[32] Such incidents are now more common, as Russia begins to re-emerge militarily, with recent RAF reports to the media of ten interceptions in the last year.[33] Although there is no suggestion that any form of attack would be made and it would undoubtedly cause a major diplomatic incident, imagine the impact of a Russian bomber seen flying over a UK city.

Although the likelihood of an air attack on the UK is slim, the consequences of the Government not defending its airspace could be significant. Clearly, the purpose of this example is not to discuss the merits of Typhoon over other options that could be taken rather than leaving UK airspace undefended. However, it does serve to illustrate the potential impact of longer procurement cycles on balancing risk in an uncertain environment. In the Government's efficiency and effectiveness dilemma, it is also important to consider the potential consequences as well as the likelihood when deciding to economize in specific areas.

Military scholars will probably recognize the tensions present in the Government's efficiency and effectiveness dilemma. Clausewitz wrote about them over 200 years ago in his famous concept of the trinity. The people's desire for investment in welfare versus defense, the Government's security responsibilities and foreign policy agendas and the military's skill at configuring for success in uncertainty equate to his, "three tendencies."[34] For the Government, achieving the optimum balance between effectiveness and efficiency will achieve a corresponding balance in the trinity, provided the military – the third element – gives correct advice. Like Clausewitz's, "object suspended between three magnets," the system will be in equilibrium.[35] However, just as overzealous efficiency without balancing effectiveness can result in instability and failure, so can flawed inputs from the third element. The influence of inter-service

---

[32] UK Defence News, "Typhoon launches operationally for the first time" http://webarchive.nationalarchives.gov.uk/tna/+/http://www.mod.uk:80/DefenceInternet/DefenceNews/MilitaryOperations/TyphoonLaunchesOperationallyForTheFirstTime.htm (accessed 4 May 2010).

[33] Details of Russian interceptions given in an article about interceptions of passenger aircraft for potential terror threats. Jonathan Beale, Defence Correspondent, "RAF fighter jets scrambled amid terror plot fears", BBC News, 29 March 2010. http://news.bbc.co.uk/2/hi/uk_news/politics/8592070.stm (accessed 29 March 2010).

[34] Howard, Paret, *Clausewitz - On War*, 89.

[35] Howard, Paret, *Clausewitz - On War*, 89.

rivalries on Government decision making can have a serious de-stabilizing effect and result in the wrong answer for defense.

Inter-Service Rivalry

In Clausewitz's wars, the element of friction that he did not have to deal with was inter-service rivalry. Of course, nations had navies and armies, but the Prussian theorist dealt with land battles, over which the Navy had little influence. As Mahan later pointed out, navies fought for command of the seas, enabling trade and transporting armies and their equipment to areas of conflict.[36] There was an overlap, when the Navy used the fleet's guns as artillery to support land battles. It even became common in the 19th century for sailors to bring powerful naval guns ashore to augment land forces.[37] In earlier times, it was just as common for army artillery soldiers to man guns on ships, as the embryonic Royal Marines took shape.[38] Royal Artillery Fire Support Teams still embark on Royal Naval ships to coordinate naval gunfire support. However, the two Services' main roles were very independent – although complementary at time – with neither wanting to take over the other's core roles. As the mainstay of British power for hundreds of years, there was no reputational angst associated with the RN playing a supporting role in land battles, as an adjunct to its *conventional* role. Prior to the First World War, Britannia ruled the waves and the RN had put her in that position.

However, the emergence of air power in warfare changed the inter-service dynamics forever. As Dr Ian Horwood points out, in relation to US experiences, "inter-service rivalry is especially prevalent in this particular area of military activity. From the very beginnings of military aviation, armies and navies have argued as to how the new assets should be used, how they should be developed and which service should control them."[39] As we will see in the next chapter, each Service can field various arguments as to why they should have control of different aspects of airpower. However, in our quest

---

[36] Rear Admiral Alfred Thayer Mahan, John B. Hattendorf ed. *Mahan on Naval Strategy: Selections from the Writings of Rear Admiral Alfred Thayer Mahan* (Annapolis, MD: Naval Institute Press, 1991), 28, 101.
[37] Peter Hore, *Seapower Ashore: 200 Years of Royal Navy Operations on Land* (London, UK: Chatham Publishing, 2001).
[38] Royal Marines Museum, "A short history of the Royal Marine Artillery." http://www.royalmarinesmuseum.co.uk/museumresearch/PDFs/A%20Short%20History%20Of%20The%20Royal%20Marine%20Artillery%201804-1923.pdf (accessed 10 May 2010).
[39] Dr Ian Horwood, *Interservice Rivalry and Airpower in the Vietnam War* (Fort Leavenworth, Kansas: CSI Press, 2006), 1.

for a balance between efficiency and effectiveness, what we are trying to spot are arguments motivated *more* by organizational protectionism than the best interests of the nation's defense. The word *more* is emphasized, because it is unreasonable to expect individuals who have devoted their life to a particular Service not to introduce some bias into their advice – no matter how hard they try. Decision makers have to be mindful of this and guard against its influence.

As we have already discussed, for a fixed level of taxation, the distribution of funding between governmental departments is largely a zero-sum exercise. As HM Treasury tries to balance the books, higher defense spending generally means less funding available in other areas. Parliament debates the defense budgetary allocation (The Statement on the Defence Estimates) and budgetary allocations for other departments every year. However, since the 1968 *Defence White Paper* unified the MOD's budget structure, the resources given to each individual Service are not specifically debated in the House.[40] Major equipment acquisition programs that impact on an individual Service may be the subject of public debate, but not lower-level financial allocations. As we will see in the next chapter, resource scarcity has always caused friction between the Services. This friction used to equate to current debates between different government departments about their share of the budget. However, now that the MOD receives a single budgetary allocation, it is more evident to Service staffs that spending in their interest areas will be cut if another Service makes a better case for increased funding.[41] These debates are internal to the MOD, rather than in parliament, and only surface when the media takes an interest – mainly when inter-service rivalries are at their fiercest because of severe resource constraints. With few other avenues to raise single-Service perspectives in the public domain, it is not surprising that the media becomes the main outlet for public debate.

It is important to re-iterate that inter-service rivalry is not necessarily a bad thing. Organizational theory shows that different cognitive and emotional organizations are beneficial in uncertain environments. It is also important for everyone in the defense

[40] *Times (London)*, "Change in headquarters organization. More details of Forces' future promised," 23 February 1968, 8.
[41] Paul Cornish and Andrew Dorman, "Blair's wars and Brown's budgets: from Strategic Defence Review to strategic decay in less than a decade," *International Affairs* 85: 2 (2009), 257.

community to challenge unnecessary expenditure on behalf of British taxpayers. If the challenge results in the same capability being delivered for less, or a reduction in unnecessary duplication, it is good for the country. The danger lies in Service parochialism and pursuing agendas that are motivated by desires other than the best interests on British defense.[42] The difficulty is that most of the protagonists in cases of single-service parochialism believe that they *are* acting in the best interests of the country. I am sure many advocates of RAF abolition truly believe it would be more detrimental to the country to take cuts in their Service instead.

Returning to organizational behavior theory, as promised earlier in this paper, theorists postulate that a key priority for any organization is to ensure its own survival.[43] It is perhaps, therefore, understandable that the natural tendency in any Service is to look to its own future before the overall needs of British defense. As Carl Builder astutely points out, "institutional motivations towards institutional survival, sovereignty, and well-being are legitimate enough; they just are not necessarily the same as those, say, of the country."[44] This further underpins the relevance of differentiation in the organizational structure for UK defense. The natural propensity for each Service to look after its own interests – even if it tries to be more altruistic – is only balanced by the other Services doing the same. The strength of the Equipment Capability areas in the MOD, where all equipment decisions are made, lies in their staff composition – officers from all three Services representing different cognitive orientations. Hopefully, this construct provides the antithesis of *groupthink*.[45] This balancing of ideas is the best way to achieve a more valid input to the military aspect of the Clausewitzian trinity discussed in the previous section. However, if any voice is allowed to dominate, without thinking about the totality of current and future defense requirements, the flexibility necessary to counter threats in an uncertain world will undoubtedly be reduced.

---

[42] See comments on the unitary view of war: Hew Strachan, "One War, Joint Warfare," *RUSI Journal, Aug 2009, Vol. 154, No. 4*, 22.

[43] This theory relates to the group of contingency theories categorized as *organic*, to which all of the theories relating to environmental uncertainty belong. See Lex Donaldson, *The Contingency Theory of Organizations* (Thousand Oaks, CA: Sage Publications, 2001), 29 and Gareth Morgan, *Images of Organization* (Thousand Oaks, CA: Sage Publications, 2006), 65.

[44] Carl H. Builder, *The Masks of War – American Military Styles in Strategy and Analysis* (Baltimore, MD: John Hopkins University Press, 1989), 11.

[45] Irving L. Janis, *Groupthink* (Boston, MA: Houghton Mifflin, 1982).

As we will see in the next chapter, the thread of inter-service rivalry runs throughout RAF history in the 1920s period. Access to primary source and authorised biographical material enables us to see its influence more clearly than we can in some contemporary debates. Are recent challenges to RAF independence motivated by a genuine desire to do what is best for the country? Similarly, does the RAF attempt to influence departmental decisions in favour of its agenda? The answers will be left to the reader; however, it is worth remembering while reading about rivalry in the 1920s, that the fundamental human motivations in play then still exist today.

Chapter 3

Strangle the Infant

What is the relevance to contemporary debate?

As highlighted in the introduction to this paper, there has been more media focus on abolishing the RAF in the last few years than at any time since the 1920s. The decade after the RAF's formation is the only time when the junior Service has experienced serious existential threats – until, perhaps, today. Some may wonder what validity an in-depth exploration of that period has with respect to current debates. The full utility of airpower was only just becoming clear in 1918, and the technological progress from the *De Havilland DH 9* to the *B2 Stealth Bomber* is almost too much to comprehend. However, as highlighted in this paper's introduction, what we are looking for are enduring questions about RAF independence – ones that were valid in 1920, today and in the future. The existence of an entire Service that has proven its worth in the defense of the nation should not be at the mercy of the latest equipment fad, or a contested perspective about the future of warfare. An exploration of 1920s threats to RAF existence - using primary source material from within Government - not only demonstrates many of the concepts that we have discussed so far, but also shows which enduring questions we need to answer.

Before delving further into 1920s history, it is worth taking a brief look at other contextual reasons why threats to RAF independence may have only emerged then and now. Over the course of WWI, UK national debt rose from about 30% to 135% of GDP, leaving the post-war nation in a serious economic crisis. As we will see in this chapter, Britain attempted to reduce the financial burden, but before the national leadership made much progress, the country was plunged into war again. After WWII, despite the expense of the Cold War, the nation gradually reduced its debts, returning to pre-1914 levels by the 1990s, in % GDP terms. Unfortunately, that position has begun to change over the last few years, as the global economic situation worsens. The current financial

crisis - highlighted by the collapse of Lehman Brother's Bank in September 2008 – has resulted in UK debts rising to over 50% GDP for the first time in over thirty years. [1] Britain is facing severe financial problems, as it did in the 1920s, and the Government is looking critically at all areas of the public sector for savings. However, on other occasions since the 1920s Britain has had financial problems, but RAF independence has not been challenged – so why then and now? The answer lies in the Government and the nation's perception of threats to national security, coupled with inter-service issues and politics.

Immediately after WWI, the direct threat to the UK was perceived to be minimal – particularly the air threat. Concurrently, the British Army were engaged in expensive counter-insurgency operations in various parts of the British Empire. The parallels to today and post Cold War Britain are clear. In the 1930s, the need for an RAF was evident as the German air threat began to develop. After WWII, the nation was in an economic crisis, but two factors would have made a challenge to RAF independence unthinkable. First, there was the Soviet bomber threat and the obvious need to protect UK airspace, which lasted throughout the Cold War. Second, the legacy of the Battle of Britain and the tremendous sacrifices of Bomber Command crews would have made any suggestion of disbanding the RAF political suicide.

More recently, the first faint murmurs questioning RAF independence were uttered in the press when the Soviet air threat went away.[2] However, the 1991 Gulf War and subsequent air operations over Iraq and Kosovo silenced those early critics. The large RAF contribution to Operation TELIC (Operation Iraqi Freedom) in 2003 further underpinned the Service's independent status. Today, it is the combination of financial crisis at home, ongoing land-centric wars and minimal perceived threat to the UK homeland that combine to make the RAF appear vulnerable – as it did in the 1920s. Challenges to RAF independence in the 1920s probably have more similarities to contemporary debates than we know, until the National Archives release Government papers in the future.

---

[1] UK Public Spending and Debt figures 1900-2010. http://www.ukpublicspending.co.uk/downchart_ukgs.php?chart=G0-total&year=1900_2011&units=p (accessed 3 May 2010).

[2] Hansard, House of Commons Debate, 23 April 1998, volume 310, cc979-94.

Early Challenges to Smuts' Arguments

In the aftermath of WWI, the embryonic RAF faced increasing pressure from its older siblings to justify its independent status. Smuts had justified the organization's formation using two main arguments – independent air action and the control of airspace. The first remains controversial to this day and the second requirement depends somewhat on the Government's perception of the threat, as we have discussed. It is useful, therefore, to take a brief look at how Smuts' justifications influenced early challenges to RAF independence and the new Service's rebuttals. Later arguments on both sides became more sophisticated, but elements of Smuts' work still influence the debate.

To the older Services and their supporters, armies on the Western Front and the naval blockade of Germany had won the conflict – not independent air action.[3] While air power undoubtedly provided an advantage on the battlefield, in terms of intelligence gathering and artillery-like support, the utility of its independent use was debatable.[4] Strategic bombing raids by both sides appeared to have had little impact on the overall outcome of the war, other than drawing resources away from the front-line to defend target areas.[5] The RAF's main contribution to victory was, undoubtedly, its direct support on the Western Front.[6] Therefore, from an Army or Navy perspective, why draw valuable air resources away from supporting troops or ships to pursue an unproven concept? In rebuttal, Chief of the Air Staff Hugh Trenchard emphasised the impact that air raids had on undermining the morale of German workers and, hence, the German war machine. The real strength of his argument is that it is difficult to prove or disprove conclusively - as the number of books debating strategic bombing indicates.

Trenchard undoubtedly influenced the results of post-war bombing studies – validating his WWI performance as Independent Force commander and protecting his new Service.[7] As our discussion of inter-service rivalries suggests, his belief that the nation needed an independent air force over-rode other considerations – as it did on later occasions. Trenchard's arguments proved successful in helping to maintain RAF

---

[3] Malcolm Cooper, *The Birth of Independent Air Power* (London, UK: Allen & Unwin, 1986), 141-151.
[4] Cooper, *Birth of Independent Air Power*, 141-151.
[5] Tami Davis Biddle, *Rhetoric and Reality in Air Warfare* (Princeton, NJ: Princeton University Press, 2002), 74, 78.
[6] Richard R. Muller, "Close Air Support", *Military Innovation in Interwar Period*, ed. Williamson Murray and Allan R. Millett (New York, NY: Cambridge University Press, 2008), 146.
[7] Biddle, *Rhetoric and Reality*, 62, 69.

independence in the immediate aftermath of the war – but not necessarily for the right reasons. Unfortunately, from this point onwards strategic bombing became synonymous with independent action and RAF independence. This linkage has probably been responsible for generating more unnecessary friction between the Army and the RAF over the following years than any other. As we have seen, one of the key aims of an organization is to ensure its own survival. By predicating RAF survival on strategic bombing during the first debates, it is not surprising – although not excusable - that future support to the Army and Navy suffered.[8]

There were better WWI illustrations that Trenchard could have used, which corroborate the argument for an independent air force, but adhere more closely to Smuts' thinking. Unlike the USAF's independence rationale - Smuts did not suggest that independent air action had to be *decisive* in warfare.[9] His arguments were that independent air action had utility, but Army and Navy commanders were unlikely to exploit it fully, because of a natural over-fixation on their own domains. As contingency theory shows, differentiation – in the form of RAF independence – is the route to cognitive diversity and, hence, innovation. In WWI, at the tactical and operational levels, much of the RAF was independent in name only.[10] Most early commanders focused exclusively on direct support, sometimes obscuring the advantage that long-range air power could provide. For example, had the air force assigned more aircraft to long-range reconnaissance during the Amiens breakthrough, British commanders may have anticipated and countered the enemy reinforcements who eventually sealed off the gap.[11]

The perception that independent *offensive* action is *the* rationale behind an independent force remains in some areas. However, independent action can mean how airpower is employed away from the battlefield to assist the Joint fight – beyond where the Army and Navy's cognitive focus is. Truly independent airmen at Amiens, who were not constrained by Army thinking, may have been able to innovate in that way. The

[8] Gooderson, Ian, *Air Power at the Battlefront: Allied Close Air Support in Europe 1943-45* (Portland, Oregon: Frank Cass Publishers, 1998), 22, 23.
[9] Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power* (Bloomington, Indiana: Indiana University Press, 1975), 46.
[10] Cooper, *Birth of Independent Air Power*, 125.
[11] J. C. Slessor, *Air Power and Armies* (Tuscaloosa, AL: University of Alabama Press, 2009), 169-175.

independent use of airpower as described here, as opposed to strategic bombing, needs to form part of the contemporary debate.

The importance of Smuts' second element – control of airspace – was less open to debate. Britain clearly needed air defense at home and the Army needed air superiority over the battlefield. The issue was how much air defence capability was required after the war, given the perceived lack of threat, and whether such a small task justified an independent RAF. In order to understand the arguments on both sides, it is necessary to examine the background to Smuts' original recommendations. It is probably fair to say that Smut's work was born of a knee-jerk reaction to public outcry over the London bombings. As John Sweetman puts it, "the so-called Smuts Committee, and its subsequent second report, may be seen primarily as a suitable opiate for national fury at impotence in the air."[12] However, as discussed in previous chapters, Government responsibilities for its citizens' security are difficult to ignore. Faced with public fear and outcry, Lloyd-George had little option but to address their concerns in some way.

Previous attempts to improve the effectiveness of British air defense by organising Royal Naval Air Service (RNAS) and Royal Flying Corps (RFC) aircraft under a unified command had failed. There were not enough aircraft available to satisfy both Services' aspirations and they had been fighting about air roles and missions since 1915. The Army resented machines being diverted from direct support of troops on the Western Front and the Navy – at one point - wanted to launch a strategic bombing campaign against German industry. [13] In the months preceding July 1917, air power on the Western Front had priority and Admiral Beatty, the commander of the Grand Fleet, was frustrated by inadequate RNAS support to maritime operations.[14] Air superiority in the field was a serious issue, as the Royal Flying Corps was losing 300 aircraft a month by early 1917 – a statistic that would continue to rise for the rest of the war.[15] Neither Service was keen to divert resources away from what they considered primary missions to provide home air defence. [16]

---

[12] John Sweetman, "The Smuts Report of 1917: Merely Political Window Dressing?", *Journal of Strategic Studies, 1981, Vol 4, Issue 2,* 172.
[13] Cooper, *Birth of Independent Air Power* , 42-53.
[14] Cooper, *Birth of Independent Air Power* , 101.
[15] Cooper, *Birth of Independent Air Power* , 67.
[16] Cooper, *Birth of Independent Air Power* ,105.

Each Service thought about war differently – Army and Navy officers matured differently and their thinking was different. However, what was needed to overcome their subordination of air defence was a third way of thinking. With predictions that more aircraft would become available and assurances that the new RAF would support Army and Navy interests, Smuts' proposals offered the Government a neat solution. In fact, less aircraft became available than expected and the German bombing campaign subsided, so the embryonic RAF was predominantly engaged in supporting the Army and Navy.[17] With only one air raid occurring after the new Service formed on 1 April 1918, the air defense problem had conveniently solved itself.[18] These facts, coupled with the further reduced threat at the end of the war made the need for a large, independent, air defense force debatable. However, as discussed previously in this document, the consequences of an air defense mistake could be severe. Could the Government rely on the Army or Navy to focus on something so important that they would consider a secondary role? Immediately after the war, Lloyd-George's advisors decided that they could not. The question remains a valid one for our contemporary debate. Despite early discussions about strategic bombing or air defense, the first serious challenges to RAF independence were less about the employment of airpower than about economics.

Arguments with an Efficiency Bias

During the war, when financial issues were not the most significant concern, the other Services did not seriously contest the creation of their new sibling. As Malcolm Cooper highlights, "as long as they were guaranteed their own air support requirements, the two services were not disposed to protest too hard at their airmen changing uniforms."[19] However, that situation was about to change. In 1919, Lloyd-George's government based their planning on the assumption that there would not be a major war involving Britain for at least ten years.[20] This placed severe constraints on equipment purchases and modernization for the armed forces, which were also having their manning slashed as personnel demobilised. Faced with a considerable war debt, the Government

[17] Frank Morison, *War on Great Cities: A Study of the Facts* (London, UK: Faber & Faber, 1937), 218-234 and Cooper, *Birth of Independent Air Power* , 107, 115.
[18] A Rawlinson, *Defence of London 1915-1918* (London, UK: Andrew Melrose Ltd, 1924), 242.
[19] Cooper, *Birth of Independent Air Power*, 105
[20] Robin Higham and Stephen J. Harris, *Why Air Forces Fail: The Anatomy of Defeat* (Lexington, KY: University Press of Kentucky, 2006), 315.

wanted rapid disarmament and minimum spending on policing the Empire. Once these financial hardships began to bite, the existence of another Service was seen as an unwelcome drain on resources. Andrew Boyle, Trenchard's biographer, points out that, "Lloyd-George was determined to economise on the fighting services; and air force needs in the closing months of the war had cost the taxpayer close on one million pounds per day."[21] The Army and Navy saw the disbandment of the RAF as a way to improve their own budgetary allocations. The first onslaughts were defeated, not because of operational considerations, but because Winston Churchill – the new Secretary of State for War – supported Trenchard's lower budget proposals for retaining the Service.[22]

The Chief of the Imperial General Staff (Field Marshal Wilson) and the First Sea Lord (Admiral Beatty) were determined to smother the new-born. However, in late 1919, Trenchard managed to reach a 'gentleman's agreement' with Beatty to give him twelve months to prove the RAF's worth.[23] Critically, during that period the Service focused on building infrastructure at home and policing the Empire. A combination of economics, operational effectiveness and luck provided a longer stay of execution.

The Government needed to suppress an uprising in British Somaliland, led by the fanatical Mohammed bin Abdullah Hassan, 'the Mad Mullah.' Wilson had informed the Colonial Secretary, Lord Milner, that he would require at least two Army divisions to complete the task – having suffered previous defeats in the area. The estimated cost of the operation was several million pounds and the likely duration was up to a year.[24] The country could not afford to commit that amount of forces, so Trenchard seized the opportunity. In discussions with Milner he suggested: "Why not leave the whole thing to us? This is exactly the type of operation which the RAF can handle on its own."[25]

To the annoyance of Wilson, Trenchard's gamble paid off. Bombing the Mullah's main refuges and denying him the traditional sanctuary of forts achieved the desired effect - he was defeated in less than three weeks for a cost of only £77,000.[26] It

[21] Andrew Boyle, *Trenchard* (London, UK:Collins, 1962), 327.
[22] UK National Archives CAB 24/90, Royal Air Force Estimates, 24th October 1919.
[23] Steven Roskill, *Admiral of the Fleet Earl Beatty: The Last Naval Hero* (New York, NY: Atheneum, 1981), 305.
[24] Sims, Charles, *The Royal Air Force: The First Fifty Years* (London, UK: Adam & Charles Black, 1968), 38.
[25] Boyle, *Trenchard* , 366.
[26] Boyle, *Trenchard*, 369.

would be disingenuous to suggest that air power achieved an independent victory, given that indigenous troops and an Indian battalion were involved.[27] It is also important to note that the RN transported most of the aircraft and personnel to Somaliland.[28] However, the RAF's apparent ability to reduce the cost of policing the Empire was an attractive proposition for the Government.

Perhaps the most important point for contemporary debates is that the plan – despite the fact that it would probably be ineffective today – was only conceived because of independent thought. It is highly unlikely that an Army or Navy officer, cognitively focused on the way their Services conducted warfare, would have developed such an alternative option. Even if they had, it would have been difficult to progress such an unconventional approach through the chain of command to enactment. Independent airmen were free to innovate and experiment with the utility of air power – unconstrained by preconceptions about its relationship to ground or naval forces.

However, one short demonstration of the utility of air power was not enough to silence the critics. In February 1920, the *Daily Mail* newspaper published an article suggesting that the RAF was about to be scrapped.[29] Fortuitously, an insurgency was brewing in British controlled Iraq and the cost of operations there was beginning to alarm the Government.[30] By 1921, the Army garrisons were spending in excess of £18M per annum and the General Staff were requesting additional troops.[31] Trenchard once again proposed an air power solution, at the Cairo Conference, with an estimated cost of £6M per year.[32]

Wilson had written to the Cabinet as early as 1919 explaining that the Army had insufficient manpower to cover its commitments – especially if any problems arose in Mesopotamia (Iraq).[33] Once this scenario transpired, a radical solution was clearly required, which Trenchard provided. Initially Wilson had conceded that, "if [they] had

---

[27] *Flight Magazine*, 26 February 1920. No.583 (No 9 Vol XII), 226.
[28] *Times (London)*, "Mullah's Overthrow – Dervishes scattered by aeroplanes," 19 February 1920, 13.
[29] *Flight Magazine*, 26 February 1920. No.583 (No 9 Vol XII), 225.
[30] Boyle, *Trenchard*, 371.
[31] UK National Archives CAB 24/106, Mesopotamian Expenditure: Memorandum by the Secretary of State for War, 1st May 1920, 67A –Appendix, 75.
[32] UK National Archives CAB 24/126, Report of the Cairo Conference, June 1921, Section II, Appendix 13.
[33] UK National Archives CAB 24/78, The military situation throughout the British Empire, with special reference to the Inadequacy of the numbers of troops available, by Sir Henry Wilson, 26 April 1919, 349.

plenty of aeroplanes and air personnel…[the Army] could commence a reduction of [their] garrisons."[34] He did not believe that the air resources could be provided. Once he realised that Trenchard was likely to gain Cabinet approval and that the RAF would be taking the lead Wilson became violently opposed.[35] However, reducing Army costs by introducing more air power was an attractive proposition, which the British Cabinet backed – despite the strong protests from the War Ministry.[36] The concept of air control or air policing, which underpinned the RAF's continued existence in the 1920s, had been born.

The influence of air power over tribesmen who had never seen aircraft before did make the situation more manageable and it cost less. Early RAF-led activities in Iraq cost £8m – a significant saving on £20M Army estimates to achieve the same effect. By 1930, the annual cost had fallen to £650,000.[37] The controversial perception that air power is a swifter, cheaper, neater alternative to ground forces – reflected in late 20th and early 21st century US policy - was taking shape in the minds of politicians.[38] The truth is, of course, that indigenous Arab troops led by British forces complemented the role of air power – more akin to experiences in Afghanistan in 2001.[39] However, it was the independent thought of airmen that made it happen - whether or not they were in a supporting role was irrelevant. The RAF, built for conventional warfare over the Western Front and the defence of British skies, had adapted to police the Empire affordably. Differentiation aided innovation and the organization adapted to overcome uncertainty in its environment – as contingency theorists predict.

---

[34] UK National Archives CAB 24/106, Mesopotamian Expenditure: Memorandum by the Secretary of State for War, 1st May 1920, Appendices, 74.
[35] Boyle, *Trenchard*, 378.
[36] UK National Archives CAB 23/26, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, SW., on Thursday,18th August, 1921, at 1130 am., 309.
[37] Smith, Malcolm, *British Air Strategy Between the Wars* (Oxford, UK: Oxford University Press, 1984), 29.
[38] Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, NY: Cornell University Press, 1996), 355; Joseph T. Stanik, *El Dorado Canyon: Reagan's Undeclared War with Qaddafi* (Annapolis, MD: Naval Institute Press, 2003), 232-240; Dag Henriksen, *NATO's Gamble,Combining Diplomacy and Airpower in the Kosovo Crisis 1998-1999* (Annapolis, MD: Naval Institute Press, 2007), 82-88.
[39] Richard W. Stewart, *Operation Enduring Freedom: The United States Army in Afghanistan, October 2001-March 2002* (US Army Center for Military History, CMH Pub 70-83-1, 2004), 8-10.

The other Services were furious about air policing in Iraq and, having reached the end of the amnesty year, began to attack. Beatty and Wilson countered with declarations that they could no longer fulfil their traditional roles without the RAF giving back their air power. This inter-service rivalry led to the Balfour inquiry, which looked at the roles and missions of the Services with respect to air power. On this occasion, it was the air defence of Britain – still very much in the public mind – that came to Trenchard's defense. Balfour's 1921 report, which will be discussed in more detail later, concluded that neither of the other two Services was suitable to lead in this area, because they saw air power as subordinate to other roles – the RAF should stay.[40] Based on WWI experience and their later correspondence, which we will explore, Balfour was correct in his analysis. The other Services would not have afforded air defence a high priority – especially with other *primary* roles that needed funding. It would become increasingly clear that Wilson and Beatty had deeply held beliefs about what was best for their Services and RAF independence ran counter to them. However, like some of Trenchard's, their beliefs and actions did not necessarily correlate with what was best for the nation. Unfortunately, all three chiefs - like some individuals today - seemed to think that the two things were synonymous.

In late 1921, Lloyd-George's Government faced severe criticism about its economic policies. Inflation was rising, unemployment was over two million, and military activities overseas were costly. National debt was at over 150% of GDP and rising very rapidly.[41] Sir Eric Geddes was appointed as the chairman of a new committee that would seek out and destroy extravagance in the public sector. The Army and Navy immediately resolved to defend themselves by offering up the RAF as a financial saving.[42] Geddes was only concerned with economics, so Trenchard's justifications based on roles and missions initially held little sway with him. In an effort to influence Geddes, Wilson argued that the RAF was superfluous and that the junior Service having its own supply and administration branches was a wasteful duplication.[43] These were

[40] Boyle, *Trenchard*, 397-401.
[41] UK Public Spending and Debt figures 1921. http://www.ukpublicspending.co.uk/downchart_ukgs.php?chart=G0-total&year=1900_2011&units=p (accessed 3 May 2010).
[42] Boyle, *Trenchard*, 402-407.
[43] Boyle, *Trenchard*, 407.

among the first arguments based on the unnecessary duplication of support functions - a perspective that needs to be considered in the current debate.

On 27 October 1921, Lord Newton (who represented the War Secretary) started a debate in the upper chamber of Parliament by asking the Secretary of State for Air: "What is the estimated additional cost of maintaining the Air Force as a separate service instead of placing it under military and naval administration?" These ideas are reflected in more recent media articles, by Tim Collins and others, mentioned in the introduction to this paper. In 1921, Lord Newton went on to add, "If I am not mistaken, in all other countries the Air Service is under the administration of the military and naval authorities." Lord Vernon, pursued the case that an independent Air Force is expensive, especially if the Army and Navy do not feel it supports them adequately. The Under-Secretary of State for Air, Lord Gorell, argued that dividing the Service between the Army and Navy would result in duplication in technical areas and an overall cost increase.[44] The Times Newspaper carried a report on the debate the following day.[45] The Admiralty approached Geddes with similar complains about the inefficiencies of operating an independent RAF.[46] The Committee reflected both Service's sentiments in their interim report: "The Navy and the Army both urge that the most effective and most economical use cannot be made of the Air Arm so long as the personnel is controlled by another service."[47]

However, Winston Churchill sought to influence the Geddes Committee in a different way. In conversation with the chairman, he extolled the virtues of airpower, pointing out that any country not developing it would be at a critical disadvantage in the next war. Churchill went on to state: "Moreover, we are inclined to think that the growth of the Independent Air Force will in the future take place largely at the expense of the two older services, and that important economies will be secured thereby."[48] It is obvious from comments in Geddes' report that Churchill and Trenchard's discussions about air power's potential had an influence on him. However, the boldness of Churchill's

[44] Hansard, House of Lords Debate, 27 October 1921, Volume 47, cc99-110.
[45] *Times (London)*, "Subsidy for Air Transport," 28 October 1921, 10.
[46] Boyle, *Trenchard*, 407-408.
[47] UK National Archives CAB 24/131, Interim Report of Committee on National Expenditure by Sir Eric Geddes, 14 December 1921, 6.
[48] Boyle, *Trenchard*, 408.

statement above – which encapsulated the other Service's fears – probably increased their bitterness towards the RAF.

If the Army and Navy needed any confirmation that defense spending was a zero-sum game – as it is today - then the introduction to Geddes' interim report in December 1921 provided it: "We have come to the conclusion that the cost of the defence of the Empire, so far as it falls upon the British taxpayer, must be considered as a whole. The necessity for this is much more apparent now than it was before the war, more especially because of the advent of the Air arm, which has come so much to the front, either as an addition to the older fighting services, or in substitution for them."[49] However, from the other Services' perspective, worse was to come in the body of the document with statements like: "Economies to an increasing extent ought to result in the older Arms from the advent of the Air Force," and, "We are particularly impressed with the very large savings which we are told can be realised in the Middle East as soon as the transfer of responsibility from the Army to the Air Force can be effected," and, "It can no longer be denied that by the intelligent application of air power it is possible to utilise machinery in substitution for and not as a mere addition to Man-power."[50]

Faced with having to defend against large budget cuts, the older Services turned to their supporters in the press and parliament for help with a campaign against the RAF. As we discussed with respect to inter-service rivalry, the media is sometimes used by the Services when they want to influence decision makers and they feel they have no other means. In November 1921, Wilson initiated the action during a speech about the use of aircraft in warfare, in Amiens, France. He suggested that air warfare was developing into a "movement for killing women and children," and questioned whether it should be developed further because, "soldiers did not like it." His parting sentiment was that, in order to limit the horrors of war in the future, thought should be given to limiting aeroplanes rather than submarines – no doubt calculated to demonstrate unity with Beatty.[51] In times of financial scarcity, supporting another Service in the interests of undermining the third is an enduring technique – best for the two more powerful

[49] UK National Archives CAB 24/131, Interim Report of Committee on National Expenditure by Sir Eric Geddes, 14 December 1921, 5.
[50] UK National Archives CAB 24/131, Interim Report of Committee on National Expenditure by Sir Eric Geddes, 14 December 1921, 7.
[51] *Ashburton Guardian*, New Zealand, "Aeroplane in War", 22 November 1921, 5.

Services, but not necessarily best for the country. Trenchard rebuked Wilson for his remarks but, almost before his ink was dry, the RN began its campaign.

Their opening shots – using information from a disgruntled ex-RNAS member of the RAF – surpassed even Wilson's.[52] On 5 January 1922, a popular London newspaper, *The Pall Mall Gazette*, published a damning article entitled, "Chaos in the Air Force." The main points raised were that the RAF was disorganised, inefficient, had poor *esprit de corps* and many accidents were caused by ignorance. The article stated that, "naval needs [had] been treated with appalling indifference owing to the self-satisfied attitude of the chiefs of the RAF."[53] Trenchard himself was accused of being the, "dictator of the Air Force."[54] In the same *Gazette* issue, Rear-Admiral Sir William Reginald Hall (a Member of Parliament (MP)) made a case for giving the Navy back its air arm.[55] Other articles followed and ex-Army MPs trumpeted the inefficiency theme.[56]

On 21 February 1922, Major Christopher Lowther, the MP for North Cumberland, questioned the Secretary of State on the cost of the Air Ministry and the truth behind allegations that some of its civil service staff had previously been removed from other departments, "on account of age, ill-health, or other causes."[57] In close succession, Major Ralph Glyn, the MP for Clackmannan and Eastern Stirlingshire, asked whether any other country had a separate air force and whether the Government had consulted the General Staff or Admiralty about efficiencies that could be obtained by abolishing the Air Ministry.[58] Not deterred by a rebuff from the Chancellor, Glyn initiated a further debate the next day about whether the RAF had enough pilots to satisfy the needs of the Army and Navy. He went on to ask whether it was true that, "the cost of [RAF base] administration amounts to about eight times the cost of operating one [air] machine."[59]

---

[52] Boyle, *Trenchard*, 411.
[53] *Pall Mall Gazette and Globe*, "Chaos in the Air Force – Present state of the Force a national peril," 5 January 1922, Front Page. The *Pall Mall Gazette* was an influential London evening newspaper of the time.
[54] *Pall Mall Gazette and Globe*, "Chaos in the Air Force – Present state of the Force a national peril," 5 January 1922, Front Page.
[55] *Pall Mall Gazette and Globe*, "Single Control the Vital Necessity," 5 January 1922, 2.
[56] *Pall Mall Gazette and Globe*, "The Navy must fly," 6 January 1922, 23.
[57] Hansard, House of Commons Debate, 21 February 1922, Volume 150, cc1735-6W.
[58] Hansard, House of Commons Debate, 1 March 1922, Volume 151, cc372-3.
[59] Hansard, House of Commons Debate, 2 March 1922, Volume 151, cc536-7 and cc537-8.

Again, the administrative and infrastructure overheads associated with operating an air force, independent of the Army and Navy, were central to the debate.

Undeterred by rebuttal statements from the Secretary of State for Air, on 6 March, Glyn pressed his point by asking the Prime Minister, "whether a Sub-committee of the Committee of Imperial Defence has been considering the necessity of maintaining a separate Air Force, and whether evidence in favour of the retention of the Air Force as a separate service was given by the Board of Admiralty and General Staff?"[60] While the debates were continuing, Geddes had published his final report and Churchill had formed a committee to determine how the armed forces would implement the savings. Inter-service battles behind the scenes were no less significant than those in public – as it is fair to assume that they are today in the corridors of Whitehall.[61]

Geddes' proposed cuts were severe and all of the Services questioned assumptions that the committee had made. During Churchill's review, each Service prepared their estimated costs for the next financial year, taking into account Geddes' restrictions. The armed forces Secretaries had to present the estimates to Parliament for ratification in late March. Geddes initially proposed that the Air Force could get rid of all eight UK based squadrons, in the interests of efficiency, because there was no air defense threat.[62] This was a predictable proposal from a purely economic perspective, and one that some might make today, as discussed earlier in this paper. However, Trenchard managed to persuade him that having no air defense squadrons was an unacceptable military risk, so Geddes eventually recommended leaving two.[63] When it came to enacting Geddes savings, Trenchard managed to persuade Churchill that at least four squadrons were required, because of the impact on homeland air defense and Army and

[60] Hansard, House of Commons Debate, 06 March 1922 vol 151 c841.
[61] Thomas Harding, "Harrier dispute between Navy and RAF chiefs sees Army 'marriage counsellor' called in," *Telegraph (London)*, 4 February 2009 http://www.telegraph.co.uk/news/newstopics/politics/defence/4448256/Harrier-dispute-between-Navy-and-RAF-chiefs-sees-Army-marriage-counsellor-called-in.html (accessed 26 May 2010) and Caroline Wyatt, Defence Correspondent, "UK military chiefs fight for future of their services," BBC News, 19 January 2010, http://news.bbc.co.uk/2/hi/uk_news/8466970.stm accessed 26 May 2010 and Paul Cornish and Andrew Dorman, "Blair's wars and Brown's budgets: from Strategic Defence Review to strategic decay in less than a decade," *International Affairs* 85: 2 (2009), 257.
[62] Boyle, *Trenchard*, 404.
[63] UK National Archives, CAB 24/132, Report of Cabinet Committee appointed to examine Part I (Defence Departments) of the Report of the Geddes Committee on National Expenditure, February 1922, 568.

Navy cooperation training.[64] It is important to note this documented protection of Joint training, especially in light of later Army and Navy criticisms that the RAF had done little to meet their needs. Interestingly, Geddes also recommended the closure of some single-Service training. Trenchard fought hard and won this battle with Geddes, on the grounds that developing ethos and culture is essential to operational effectiveness. In other words, he was determined to ensure that airmen developed and preserved a different cognitive orientation.[65]

The Army's first reaction to Geddes' proposed cuts was to recommend that a more efficient solution would be to abolish the RAF. In a memorandum dated 4 February 1922, Sir Laming Worthington-Evans (Secretary of State for War) wrote: "I do not think that the Cabinet realize the great loss of efficiency that is due to the duplication of services by the Air Ministry."[66] The Cabinet considered this approach at the same time as a similar one from the RN, which will be discussed later. Proposed reductions in Army manpower were predicated on withdrawing troops from the Empire, underpinned by ministerial confidence in Air Policing. The General Staff did not share this confidence and emphasized the activities of troops in tribal villages and the need to defend air bases. Their official critique of Geddes' work stated that, "the results of this [air policing] experiment remain a matter of conjecture."[67] Wilson could not resist taunting Trenchard in the document, by including a statement with echoes of his Amiens speech: "[the] aircraft in its present state of development is only effective against an enemy presenting a tangible and extensive target, or for bombing women and children."[68] There are similarities with modern-day news reports of the *indiscriminate* nature of the

[64] UK National Archives, CAB 24/132, Report of Cabinet Committee appointed to examine Part I (Defence Departments) of the Report of the Geddes Committee on National Expenditure, February 1922, 515, 568.
[65] UK National Archives, CAB 24/132, Report of Cabinet Committee appointed to examine Part I (Defence Departments) of the Report of the Geddes Committee on National Expenditure, February 1922, 561.
[66] UK National Archives, CAB 24/132, Proposal to Transfer the Functions of the Air Ministry to the War Office: Memorandum by the Secretary of State for War, Relations between the Navy and the Air Force: Memorandum by the Admiralty, 4 February 1922, 442.
[67] UK National Archives, CAB 24/132, Proposal to Transfer the Functions of the Air Ministry to the War Office: Memorandum by the Secretary of State for War, Relations between the Navy and the Air Force: Memorandum by the Admiralty, 4 February 1922, 549, 550.
[68] UK National Archives, CAB 24/132, Proposal to Transfer the Functions of the Air Ministry to the War Office: Memorandum by the Secretary of State for War, Relations between the Navy and the Air Force: Memorandum by the Admiralty, 4 February 1922, 552.

air weapon in Afghanistan.[69] Of course, these are somewhat disingenuous when you consider the targeting accuracy of unguided artillery fire and the potential devastation that it can cause. A prime example is the devastating Israeli artillery attack in September 1996, which killed over 100 civilians in the Qana UN base.[70] When the in-fighting was over in 1922, the Army did manage to avoid some of Geddes' proposed reductions. However, they had no option but to rely on the RAF in the Middle East, because the problems in Ireland were such a heavy drain on their resources.

Of all the Services, the RN took Geddes' proposals the worst. Beatty could see hundreds of years of naval primacy in British defense being challenged by the development of the air weapon. American air power campaigner Brigadier General Billy Mitchell had demonstrated the vulnerability of battleships – the backbone of the British fleet – to air attack the previous summer.[71] The Washington Naval Conference had just imposed limitations on the size of his fleet and it was becoming clear that the aircraft carrier was becoming more important.[72] In parallel with the more public activities previously outlined, the Admiralty fought hard in Whitehall for the transfer of all naval air assets back to them. Given the political dynamics of the time and the support they had from the General Staff, this would, undoubtedly, have resulted in the collapse of the evolving RAF. Following the statements about airpower in Geddes' report, and separate to his official responses, Beatty wrote a memorandum to the Cabinet on 6 February 1922. In the document, he stated:

> "The Admiralty feel that the time has come for "bringing to the notice of the Government, with a view to the institution of a thorough enquiry, the defects of the present scheme on the important grounds of efficiency. A detailed examination shows that considerable economies will result if the views of the Admiralty in conjunction with those that the War Office are putting forward are accepted."

---

[69] *New York Times*, "British Criticize Air Attacks in Afghan Region," 9 August 2007. http://www.nytimes.com/2007/08/09/world/asia/09casualties.html?pagewanted=all (accessed 10 May 2010).
[70] Anthony H. Cordesman, *Peace and War: The Arab-Israeli Military Balance Enters the 21st Century* (Westport, CT: Praeger, 2002), 413.
[71] Alfred Hurley, *Billy Mitchell- Crusader for Air Power* (Bloomington, Indiana: Indiana University Press, 1975), 64-68.
[72] *Observer (London)*, "Aircraft Carriers: Effect of Washington Restrictions", 15 January 1922, 16.

> "The Admiralty consider that the air weapon will never be developed satisfactorily for naval purposes until they are in a position to supply and administer their own Air Service, employing a suitable co-ordinating medium in those respects in which requirements are common to both the Army and the Navy."
>
> "In the present Memorandum the Admiralty recommend a policy which they are confident will lead to still further economies, whilst at the same time removing a situation which if allowed to continue, will paralyse the work of our sea forces."[73]

On 17 February 1922, the Cabinet considered the future of the RAF, in light of Army and Navy challenges. Geddes had stated that the continued existence of the junior Service was not an economic question – it was just as efficient as the other Services. Although Beatty was beginning to make arguments on the grounds of operational effectiveness, the other Services were still hoping that the cost of the RAF would prove to be its downfall. Ultimately, it was Balfour's 1921 justification - based largely on British air defense - that swayed the Cabinet decision again.[74] The measures proposed by the Admiralty and the War Office did not even feature in Churchill's recommendations for implementing Geddes' savings measures, published a few days before the Cabinet debate.[75]

Like the other Services, the Admiralty managed to fight off some of the proposed Geddes reductions, but they continued to press for the re-establishment of their air arm. Beatty, Wilson and Trenchard conceded to Geddes' recommendation that their three Ministries would have to combine in the future to create economies and better coordination – the first whispers of *Jointery*. However, they convinced Churchill that now was not the time. After the armed forces' Ministers presented their reduced 1922 budget estimates to Parliament, the character of challenges to RAF existence began to change. Instead of economic reason backed up by operational rationale, operational

---

[73] UK National Archives, CAB 24/132, Relations between the Navy and the Air Force: Memorandum by the Admiralty, 6 February 1922, 642, 643.
[74] UK National Archives, CAB 24/133, The Part of the Air Force of the Future in Imperial Defence, 17 February 1922, 3.
[75] UK National Archives, CAB 23/132, Report of Committee Appointed to Examine Part **I** (Defence Departments) of the Report of the Geddes Committee on National Expenditure, 4 February 1922.

effectiveness arguments began to take primacy – albeit, still with hints of economic motivations.

Arguments with an Effectiveness Bias

The last existential threat to RAF existence occurred in 1923 during the Salisbury Committee investigations into cooperation between the Services. Since that time, until recent debates, discussions have focused on organic air support for the other Services, separate to the independent RAF. Few authors have provided any detail about the build-up to the Salisbury Committee, or even about the inquiry itself – most focus on the outcome. However, during this period of history arguments challenging RAF independence began to mature from the rather simplistic ones previously employed. While some of the protagonists in the debate were motivated by economic concerns for their own institutions – as some, undoubtedly, are today – their arguments are no less worthy of consideration. Inter-service rivalries were evident on all sides and Trenchard, more than most, manipulated situations to protect his infant organization – particularly with respect to the French air threat. Although Lord Salisbury's report did not lead to the immediate recreation of a Royal Naval Air Service or an Army Air Corps, it did help to ensure that their eventual establishments did not result in the junior Service's demise. The Salisbury Report marked a significant turning point in the fortunes of the independent RAF and the arguments presented to the committee form the basis of many contemporary challenges.

On 15 February 1922, Rear-Admiral Reginald Hall – the same MP who wrote in the *Pall Mall Gazette* – tabled a House of Commons question about the Navy controlling its own Air Service.[76] The related debate would be held on 16 March 1922, following a discussion about the Naval Estimates; two sittings before the Air Ministry's Estimates would be presented. Hall had timed the question perfectly, in an attempt to force the Cabinet to reconsider Beatty's Naval Air Service proposals. The Cabinet discussions on 17 February about the RAF's existence were internal ones, to settle the matter of the Army and Navy's memorandums. They had not taken into account the question tabled by Hall a couple of days earlier, which the Government would eventually have to answer in parliament. Weighed down by the constant existential threats, the Secretary of State

[76] Hansard, House of Commons, Notices of Motion, 15 February 1922, Volume 150 c1023.

for Air wrote to the Cabinet pleading for a definitive statement about the RAF's future. He stated that, "constant attacks upon the independent Air Ministry, both unofficially and officially, during the last twelve months had rendered the administration of the Air Force increasingly difficult."[77] To this day, inter-service rivalry can result in staff officers expending considerable effort defending their Service from its counterparts, detracting from the business of UK defense – a definite inefficiency.[78] The Secretary of State's note and apprehensions about Hall's question forced the cabinet to look at the issue of RAF independence again on 8 March 1922.

Austen Chamberlain, The Lord Privy Seal, was due to respond to Hall's question on behalf of the Government and sought to quell the ongoing inter-service disputes. During the 8 March meeting, Churchill stated that the real problem was a lack of coordination between the Services. Geddes proposal to amalgamate the Service Ministries into a joint MOD would have provided the coordination function, but the Cabinet had not adopted it. A more empowered Committee for Imperial Defence that could direct the Services to support each other was another possible answer. The key, Churchill said would be the establishment of a Joint Staff, to draw together all three Services for joint activities – not the abolition of a Service. This view is consistent with contingency theory, which suggests that success depends on *differentiation* with strong systems of *integration.*

The Secretary of State for War's position remained that the Cabinet should disband the Air Force and split its functions between the Admiralty and his own department – the common contemporary argument. Interestingly, he advanced the argument that aircraft were becoming too important in war to leave their development to the RAF. He believed that while the RAF existed, inter-service rivalry would inevitably prove detrimental to rapid progress, but if the Cabinet gave the Army and Navy control, they would stop fighting and get on with the job. During this admission of guilt, Worthington-Evans actually stated that, "so long as it (the RAF) remained a separate

[77] UK National Archives, CAB 23/29, Conclusions of a Meeting held at 10, Downing Street, S.W. on Wednesday, March,8th, 1922, at 12 Noon, 251.
[78] Based on the author's personal experiences and discussions with other senior military officers.

service progress would be blocked by the obstruction of the older services."[79] This was a novel approach that does not appear to have been attempted at any time since. He began to complain about the difficulties experienced getting the RAF to support his training exercises and the impact this would have on air-land cooperation – something that would become an important theme. The former head of the British Army, General Sir Richard Dannet, alluded to the enduring nature of these concerns when he spoke at the RUSI Land Warfare Conference in 2008. He extolled the virtues of, "dedicated organic capabilities," at Brigade level, providing, "increased confidence of delivery of effect from the air."[80] This reference, to capabilities that the British Army obtains using Apache, highlights a continued lack of confidence that non-organic RAF airpower will turn up when required.

The Admiralty no longer called for the Cabinet to disband the RAF but simply stated that it was impossible to integrate the use of aircraft into their operations without total control of Naval Air resources. They wanted their own Air Service and they would settle for nothing less, for reasons of operational effectiveness. What both senior Services agreed upon was the need for an independent committee to settle the matter – hopefully in their favour. Guest pointed out that RAF personnel were becoming demoralised because of this in-fighting and the corresponding uncertainty about their future. The Prime Minister stepped in and struggled to find common ground – seeking, but failing, to gain agreement on Balfour's 1921 conclusions about the Air Force. As the meeting broke up, Chamberlain was undoubtedly left frustrated that the Services seemed to be more interested in their own agendas than finding the right solution for Britain's defense. His final statement was to the affect that, "the Army and Navy could not be counted upon to develop the possibilities of the new arm [and] those who believed in and desired to develop the air weapon were obstructed by the older services."[81] A similar view was expressed recently by journalist Sean Rayment, who stated: "It's also time for our defence chiefs…to put the security of the nation before the interests of their own

[79] UK National Archives, CAB 23/29, Conclusions of a Meeting held at 10, Downing Street, S.W. on Wednesday, March,8th, 1922, at 12 Noon, 253.
[80] General Sir Richard Dannet, "The Land Environment – Moving Towards 2018," (Speech, RUSI Land Warfare Conference, 12 June 2008).
[81] UK National Archives, CAB 23/29, Conclusions of a Meeting held at 10, Downing Street, S.W. on Wednesday, March,8th, 1922, at 12 Noon, 256.

individual services."[82] In 1922, Chamberlain was left wondering how he would answer Hall's question in Parliament.

On the day before the debate in the House, Chamberlain called the Secretary of State for War in the hope of finding a compromise position. Worthington-Evans rejected the suggestion that the Cabinet meeting on 8 March had settled anything about RAF independence. He insisted that the Cabinet had to agree before Chamberlain could make a statement in Parliament about the junior Service's continued existence.[83] At a hastily arranged Cabinet meeting on 15 March 1922, the heated debate continued. The Navy and Army's concerns were re-iterated and the Secretary of State for Air tried to re-assure his colleagues that the Air Force, "was desirous of co-operating with the other Services to the fullest possible extent."[84] Chamberlain accused the Admiralty of not wishing to develop the air arm and of jealousy towards the Air Force, but eventually obtained an agreed position for his speech the next day. The RAF would remain in existence for the moment, based on Balfour's principles, on the understanding that a committee would investigate air support to the Army and Navy.[85] Perhaps over-shadowed by the main debate, Guest first mentioned another important lifeline for the RAF during the 15 March Cabinet meeting.

Although the Cabinet's attention over the last few years had been focused on financial concerns and policing the Empire, the Gotha raids and Britain's vulnerability from the air was still a raw nerve. On 15 March 1922, the Secretary of State for Air brought to his colleagues' attention that the French government had just agreed to increase their long-range bomber squadrons from 64 to 140. It is interesting to note that the Cabinet immediately agreed that the increase constituted a, "formidable danger," to Britain.[86] This was undoubtedly an instance where the British saw the existence of a

---

[82] *Telegraph (London)*, "General Sir David Richard's call for a review of the Armed Forces is timely," 25 June 2009. http://www.telegraph.co.uk/comment/personal-view/5636460/General-Sir-David-Richards-call-for-a-review-of-the-Armed-Forces-is-timely.html (accessed 15 May 2010).

[83] UK National Archives, CAB 23/29, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W., on Wednesday, 15th March 1922, at 11 AM, 278.

[84] UK National Archives, CAB 23/29, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W., on Wednesday, 15th March 1922, at 11 AM, 281.

[85] UK National Archives, CAB 23/29, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W., on Wednesday, 15th March 1922, at 11 AM, 281.

[86] UK National Archives, CAB 23/29, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W., on Wednesday, 15th March 1922, at 11 AM, 282.

capability as a threat, regardless of any evidence of intent to use it. France and Britain could not agree to cooperate for mutual protection in Europe, but that did not mean the French were likely to attack.[87] Their main fear was a resurgent Germany and they were building up their forces to counter that threat. This Cabinet meeting occurred long before the Chanak Crisis and the invasion of the Ruhr strained Anglo-French relations. However, Trenchard had an opportunity to exploit the renewed interest in air defense to protect his fledgling Service – but not before the imminent parliamentary challenge.

The Naval Air Service debate in Parliament was a spirited one, with strong feelings expressed on both sides of the argument. Hall illustrated the strength of naval feeling when he stated: "I do not know any foreign nation which has a separate Air Force, and I do not know of any Admiral of a foreign nation, who held high rank in the War, who recognised a separate Air Force; nor do I know any distinguished British Admiral holding a high position at sea to-day who recognises a separate Air Force."[88] Chamberlain gave a masterful speech, outlining the rationale behind the creation of the RAF and endorsing Balfour's justification with respect to air defense. Summing up the Government's position and providing the junior Service with hope for the future, he told the House: "The Government believe that to abolish the Air Ministry, to re-absorb the Air Service into the services of the Army and the Navy, would be a fatally retrograde step. Even if it removed a little friction, and improved and facilitated the co-operation between the Air Services and purely Naval and Military operations, which is very doubtful, it would unquestionably retard the development of the Air Services in their own element, in which it may be that the future of national defence lies."[89]

Hall agreed to accept the Government's position and suspended the debate – not because of the summing up statement, but because Chamberlain also agreed to an inquiry into air support for the Navy. In addition to Balfour's air defense argument, the key defense in this debate was a return to Smuts' basic premise – the freedom to develop independent thought and, hence, innovation. Once again, the RAF's defenders were coherent with organizational theories that had yet to be developed. Over the next few

[87] John Ferris, "The Theory of a 'French Air Menace', Anglo-French Relations and the British Home Defence Air Force Programmes of 1921-25", *The Journal of Strategic Studies 10, no. 1 (March 1997),* 65.
[88] Hansard, House of Commons Debate, 16 March 1922, Volume 151, cc2457-68.
[89] Hansard, House of Commons Debate, 16 March 1922 Volume 151, cc2469-528.

months the challenges to RAF existence did not go away – after all, it was important for the other Services to keep their campaign in the public eye.

In fact, it was more important to keep the other Services' campaign alive than they thought at the time. On at least two occasions after Chamberlain's 16 March 1922 speech, MPs asked the Prime Minister for a progress update on the inquiry into RAF cooperation with the RN. On both occasions, Lloyd-George informed the House that the committee was making progress, but the inquiry was not yet complete and no estimate of its completion date was available.[90] The truth was that that the Government had not actually formed a committee. Whether this was simply an oversight, or a deliberate act to provide breathing space for the RAF is not clear. However, the evidence suggests that, after the 16 March debate, Chamberlain, asked Churchill, a known RAF advocate, to discuss the matter with Beatty and Trenchard.[91] There is no record in the Cabinet Papers of any discussion, or of the Cabinet forming a committee relating to RAF and Naval cooperation. During the latter months of 1922, the alleged threat posed to British air defence by French bombers created significant debate and, ultimately, led the Cabinet to agree an increase in RAF squadron numbers.[92] However, Lloyd-George's government fell at the end of the year, taking those who had promised the inquiry out of public office.

It was left to the new Prime Minister, Bonar Law, to explain to Parliament, on 8 March 1923, that no committee had actually formed and to ensure that the omission was corrected. This year-long delay enabled the RAF to consolidate its position over the air defence of Britain and to begin an expansion program. The Service's primary raison d'être was no longer as a cheaper alternative to the deployment of troops; it was now needed to defend the homeland – regardless of the additional cost. As we have explored previously, the public's perception that they may be insecure would allow spending priorities to shift towards defense. Operational effectiveness was the new argument for the RAF to take into Lord Salisbury's inquiry.

The delay caused disquiet among naval supporters in Parliament and probably made the Admiralty even more determined to regain its Air Arm. Beatty wrote in a letter

[90] Hansard, House of Commons Debate, 22 June 1922, Volume 155, cc1487 and Hansard, House of Commons Debate, 3 August 1922, Volume 157, cc1661-3.
[91] Hansard, House of Commons Debate, 08 March 1923, Volume 161, cc711-3.
[92] John Ferris, "French Air Menace", 72.

to his wife, "We are preparing for another great battle in Cabinet Committee over the Air question. It is a momentous question, and we cannot afford to be beaten over it. It takes a vast amount of preparation, and that alone occupies most of my time, and we stand or fall by the result."[93] Again, the efforts of Britain's leaders in defense would be expended on challenging each other rather than on current operational issues.

Following Bonar Law's announcement in Parliament, the Cabinet formally initiated Lord Salisbury's committee on 7 March 1923. It was a sub-committee of the Committee of Imperial Defence and was tasked with investigating, "Co-operation and Correlation between the Navy, Army and Air Force from the point of view of National and Imperial Defence."[94] Within Salisbury's remit was a review of the previous year's decision to expand the RAF because of the so-called *Continental Air Menace*. Given the perceived threat to national security, he set about this task first.

After the Secretary of State for Air's announcement to the Cabinet, on 15 March 1922, he had circulated full details of French air strength to the Committee of Imperial Defence, in a secret memorandum. The document was based on intelligence from the British Air Attaché in Paris about the French constructing 150 aircraft per month and structuring their air arm into two divisions, which the RAF believed had an offensive role.[95] After much deliberation, the Imperial Defence Committee reported to the Cabinet, on 3 August 1922, that there was no option but to expand the RAF at home to counter any possible French threat. The main justification was, "that the present weak position of Great Britain in the air placed [them] diplomatically at a great disadvantage vis-à-vis the French Government."[96] In short, it was not just the actual threat to British citizens that worried the Cabinet, but also the possibility that France would use any air power advantage for diplomatic coercion. This is an important consideration, as discussed previously in this paper. The vulnerability inherent in not having an adequate air defense capability is not just related to casualties from bombing. Importantly, for inter-service

---

[93] Steven Wentworth Roskill, *Admiral of the Fleet Earl Beatty: The Last Naval Hero* (New York, NY: Atheneum, 1981), 393.
[94] UK National Archives, CAB 23/45, Conclusions of **a** Meeting of the Cabinet, held at 10, Downing Street, S.W.1, on Wednesday, March 7, 1923, at 1130 AM, 108.
[95] UK National Archives, CAB 24/136, Developments in French Air Force – Memorandum by the Secretary of State for Air, 24 March 1922.
[96] UK National Archives, CAB 23/30, Conclusions of a meeting of the Cabinet, held at 10, Downing St., S.W.1, on Thursday,3rd August, 1922, at 1130 AM ,392

relationships, less than half of the cost of the expansion was destined to come from Air Ministry budgets – the rest would come from the Army and Navy.[97]

While Salisbury was re-evaluating Britain's air defense position in 1923, the country was seized by the concept of an air threat – particularly from France. Following the experiences of WWI and increasing awareness about the utility of air power, many people around the world had an ambient fear of aerial bombardment. In the realm of popular fiction, H.G. Wells' novel *The War in the Air*, which prophesised future wars involving the bombing of cities, had been re-published in 1921. Giulio Douhet published *The Command of the Air* in the same year, advocating the use of bombers against civilian centers – shattering the people's will to resist. Newspaper articles in 1922 had heightened public fears about Britain's vulnerability to air threats. For example, on 22 April 1922, *The Times* suggested that the country was in an, "inexcusable position of jeopardy," with respect to air threats.[98] Later that year, the same respected newspaper published a series of articles about air power by Brigadier-General P. R. C. Groves. Groves – actually a retired Air Commodore and former Paris Air Attaché – entitled his first contribution, "England without a Defence."[99] The series ran until 27 March – during the critical post-Geddes debates about funding. Was the Air Force guilty of utilising the media to further their cause in the same way that the other Services did? It is reasonable to say they were, albeit more well-timed self-promotion than deprecation of their adversaries.

During Lord Salisbury's deliberations, the popular press kept public fears about air threats at a high level – undoubtedly influencing MPs and committee members. Less than two weeks after Salisbury's work began, *The Daily Express*, front page headline read, "Britain Defenceless in the Air."[100] The lead article went on to explain how Britain had only 371 military aircraft, with two-thirds deployed overseas, but France had 1,260 machines. The fact that only five British squadrons were available to defend the homeland was emphasised. The *Express* based the piece on a debate in the House of

[97] UK National Archives, CAB 23/30, Conclusions of a meeting of the Cabinet, held at 10, Downing St., S.W.1, on Thursday,3rd August, 1922, at 1130 AM ,392
[98] *Times (London)*, "Our Waning Air Power", 22 April 1922, 13.
[99] *Times (London)*, "Our Future in the Air: England without a Defence", 24 April 1922, 8.
[100] *Daily Express (London)* , "Britain Defenceless in the Air", 22 March 1923, Front Page.

Lords, instigated by The Earl of Birkenhead – a close friend of Winston Churchill.[101] A further newspaper article on 24 March about air defence was entitled, "Cities open to Ruin."[102]

As one theorist has pointed out, the RAF undoubtedly exploited Government and public fears to protect its existence, but the level of hysteria about air threats was already there.[103] It was simply easier for the RAF to justify expenditure in its area, because that is where the media and, hence, the public interest lay. As we have previously discussed, having no air defence capability is not really an option – given Government obligations to the nation and the consequences of getting it wrong. In current times, it is easier to make a persuasive case for resources if the requirement is related to counter-terrorism or counter-insurgency.

At a Cabinet meeting on 9 May, Lord Salisbury gave some indications of his committee's thoughts about the air defense issue. He requested advice about answering the queries of MPs who were deeply concerned about the air threat. The Cabinet decided that, for the sake of Anglo-French relations, the Government needed to play down the issue of a specific threat from France. However, Salisbury was authorised to announce that, to keep Britain safe, "a considerable increase in the Air Force will in all probability be required."[104]

Ironically, for Beatty, the influence of British Naval policy probably had an effect on Lord Salisbury and other members of the Government when they thought about air defence. As previously mentioned, the RN had defended the people of the home islands for centuries. To ensure adequate security, Britain calculated its required naval strength using either the one-power or the two-power standard. The first of these standards meant having a navy at least one third larger than the next largest navy. The second standard meant having a navy greater in strength than the combined forces of the next two largest navies in the world. Following WWI, the one-power standard was in place – the two-power version having only been implemented during the late Victorian period, ironically

[101] Hansard, House of Lords Debate, 21 March 1923, Volume 53, cc470-511.
[102] *Daily Express (London)*, "Cities Open to Ruin", 24 March 1923, 7.
[103] John Ferris, John, "French Air Menace", 66.
[104] UK National Archives, CAB 23/45, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W.1 on Wednesday, 9th May, 1923 at 1130 AM, 261.

by Lord Salisbury's father.[105] In short, the method used to calculate the size of Britain's defensive forces since the Battle of Trafalgar involved gaining intelligence about the next largest force in the world and ensuring that the British force was larger.

Now the RAF was to become the national defender and few people understood air power, so it was easy to make a case for employing traditional naval rationale. Lord Salisbury's Terms of Reference hinted at the type of analysis expected. The peer was required to determine, "The standard to be aimed at for defining the strength of the Air Force for purposes of Home and Imperial Defence."[106] When Salisbury's report dealing with the air defense question was published on 12 June 1923, it majored on the strength of the French Air Arm and proposed a form of one-power standard. The committee estimated that France – the strongest air power – would be able to make 600 of its 1200 aircraft available to attack Britain. The Air Ministry estimated that France could drop at least 84 tons of explosives on England every day for an indefinite period. Salisbury accepted that the RAF still had to meet Navy, Army and overseas commitments, in addition to providing adequate air defence – a point that managed to appease the Navy, for the time being.[107]

The Air Ministry would have to counter the perceived air defence threat by urgent and significant expansion. In addition, Salisbury recommended that an independent bombing force be maintained at home, with strength equal to that of the strongest air force capable of threatening Britain.[108] The influence of Trenchard's theories about independent air action was clearly present – undoubtedly infuriating critics in the Army. On 20 June 1923, the Cabinet reluctantly approved the interim report and ordered its implementation, including the air one-power standard.[109] The new Government did not want to face the considerable bill attached to this expansion, but they felt they had little choice – a government has to protect its people.

---

[105] Phillips Payson O'Brien, *British and American Naval Power: Politics and Policy, 1900-1936* (Westport, CT: Praeger, 1998), 26.
[106] UK National Archives, CAB 24/160, National and Imperial Defence Sub-Committee of the Committee of Imperial Defence: Interim Report (CP 270(23)), 12 June 1923, 435.
[107] UK National Archives, CAB 24/161, The Control of Naval Air Work: Memorandum by the First Lord of the Admiralty, 26 March 1923, 422-423.
[108] UK National Archives, CAB 24/160, National and Imperial Defence Sub-Committee of the Committee of Imperial Defence: Interim Report (CP 270(23)), 12 June 1923, 435.
[109] UK National Archives, CAB 23/46, Conclusions of a Meeting of the Cabinet, held at 10, Downing Street, S.W.1. on Wednesday, June 20, 1923, at 1130 AM, 45-46.

The French air menace situation is an interesting cameo about service protectionism. RAF influence, directly and through the media, certainly distorted the balance between efficiency and effectiveness for decision makers. Trenchard successfully exploited public perceptions to guarantee the expansion and, hence, the survival of his Service. A disproportionate amount of funding was channelled into the RAF, to the detriment of the other Services. It was akin to concentrating all military expenditure and thinking on counter-insurgency in the present day, based on media reports, neglecting the possibility of other scenarios.

In the case of the French Air Menace, Trenchard's protectionism cost the country dearly in the short term, contributing to a national debt of 168% GDP.[110] However, if he had not kept the RAF in existence, perhaps the real threat that materialised in the skies twenty years later might have been more difficult to counter. That is not to say that every case of Service protectionism will have its *Battle of Britain*, or that he could not have achieved the same effect with a more tempered expansion program in the 1920s.

It initially appeared that the existential threat to RAF existence had finally passed, but the Imperial General Staff were not happy. Despite Lord Salisbury's stipulations regarding Army and Navy support, the War Office disagreed with the number of aircraft required for home defense and with the need for a three Service structure.[111] Until the committee's final report was published, the RAF's continued existence was anything but certain. In response to a request from Lord Salisbury on 20 April 1923, the War Office wrote a memorandum exposing all of their objections to RAF independence. Contained within this document are criticisms of the junior Service that endure to this day. The Army summed up their main argument succinctly in one of the paper's early paragraphs: "The Air Force is a supplementary force. Action in the air or from the air can do no more than contribute to the victory of one side or the other; it cannot by itself achieve or consolidate victory, though it may be essential to victory. The surface of the earth on which we live is the decisive plane; the Army and Navy have each their distinct sphere of action on that plane, while the Air Force is supplementary to both in a secondary

[110] UK Public Spending and Debt figures 1900-2010. http://www.ukpublicspending.co.uk/downchart_ukgs.php?chart=G0-total&year=1900_2011&units=p (accessed 3 May 2010).
[111] UK National Archives, CAB 24/160, The Expansion of the Royal Air Force for Home Defence, 15 June 1923, 595.

plane."[112] This statement came very close to setting the bar at decisive independent action before RAF independence could be justified – the same test indicated by the US Army.

The Army considered the uses of air power as falling into four distinct categories: acting as part of a military or naval formation; acting in close support; acting independently during minor actions overseas or, acting as a large force in the main theatre if the air threat temporarily denies ground freedom of maneuver. One of the paper's central arguments was about unity of control, but it really means what we would refer to as unity of command. In the War Office's opinion, air activity within the first two categories had to be, "at the absolute disposal of the commanders and staffs concerned."[113] In the Army's mind, not having air units under direct command and control in those circumstances would be like not having command of the reserve. They stated that it would have a detrimental effect on their ability to conduct operations.

With respect to minor conflicts overseas, the General Staff view was that the small number of aircraft involved would be supporting an overall military or naval strategy, so they should belong to the Army or the Navy. They envisioned dangerous situations where the Air Force would carry out actions that were not coherent with the strategic intent, thereby having a negative impact on land or sea operations. The only example in the final category that the War Office could foresee – when ground manoeuvre might be impeded by an air threat - was home defense against air raids.

In the memorandum to Lord Salisbury, the Army advanced the view that air defense was not as big a problem as commonly suggested. They did not believe that it was anything that War Office or Admiralty aircraft could not look after and that no specialist Air Force was required. As previously mentioned, events during the WWI air raids provide a conflicting view. Displaying the full extent of their parochialism, the General Staff went on to comment that, "We cannot visualize air action in the military sphere except as part and parcel of the general strategical plan for which the General Staff is responsible; nor can we consider air fighting except as an extension of ground

[112] UK National Archives, CAB 24/160, The Relative Status of the Army and the Royal Air Force: Memorandum by the Secretary of State for War, 28 June 1923, 599.
[113] UK National Archives, CAB 24/160, The Relative Status of the Army and the Royal Air Force: Memorandum by the Secretary of State for War, 28 June 1923, 600.

fighting."[114] In a final critique of independent air action, the War Office stated that the policy of Air Policing was, "fundamentally unsound," because ground troops were required to prepare the way and to guard airfields. The fact that the Army had to go to someone else to get the assets that it needed to conduct warfare was heavily criticised. With echoes of previous submissions, the General Staff recommended to Lord Salisbury that the Government should disband the RAF and split its roles between the War Office and the Admiralty, with the Army taking responsibility for homeland air defense. Latching on to fears about French supremacy, as a parting remark, the Army pointed out that the organisational structure they proposed was operating well in France.[115]

The submission neatly characterises many of the enduring differences in perspective between soldiers and airmen. The Army at the time were unable to see how air power really had any utility other than in direct support of them. Operating within their cognitive realm of warfare it was difficult for them to truly appreciate what could be done away from the battlefield to assist the overall campaign. The Navy were more attuned to this, appreciating that a naval blockade can indirectly affect an adversary's ability to wage war – reducing resources to his soldiers on the front line. Many of the points raised in 1922 to the Salisbury committee still exist as misunderstandings and cultural differences between the RAF and the British Army today - even when they are not discussed.

The Air Ministry response to the Army's challenge was a lengthy memorandum that dissected almost every point. The rebuttal contains numerous references to the findings of Lord Balfour's committee in 1921, which have already been described in this paper. However, it is interesting to note that the issue of unity of command was attacked on the basis that Navy and Army units had successfully operated under a supporting/supported structure in the past. For instance, would it be appropriate for the Army to command ships providing naval gunfire support? It is unlikely that the Navy would acquiesce, since their captains also have other roles and need to be cognitively immersed in the maritime domain. A warship is a strategic asset that cannot be tied to

[114] UK National Archives, CAB 24/160, The Relative Status of the Army and the Royal Air Force: Memorandum by the Secretary of State for War, 28 June 1923, 600.
[115] UK National Archives, CAB 24/160, The Relative Status of the Army and the Royal Air Force: Memorandum by the Secretary of State for War, 28 June 1923, 599-600.

one land commander's tactical action. What if it needs to move away to defend a convoy that will resupply the whole theatre for a month? Is the land commander, who is under fire, immersed in his tactical situation, best placed to make the right decision? Of course it depends on how critical his current battle is to the campaign's outcome. Sometimes the asset may be given to him – but never subordinated to him forever.

One of the key arguments advanced by the Air Ministry in 1922 reflects later doctrinal thinking about centralised control and decentralised execution in air forces: "One of the main reasons for maintaining one unified air service, with a single system of strategy, tactics, training and administration [is] so that its weight can be thrown in any direction – into the naval, military or independent air spheres – according as circumstances may require and the Cabinet may decide."[116] With similar relevance to contemporary debates, the Air Staff took issue with army suggestions that it was pointless to maintain large air defence forces just in case Britain came under air attack. The RAF pointed out that most armed forces, when they are not at war, are being maintained as a contingency measure.[117]

Although his committee's investigations were not yet complete, Lord Salisbury decided to issue another interim report – this time on RAF/Army relations. The Secretary of State for War (now Lord Derby) was becoming concerned that Salisbury's staff would reject his proposals because of the Air Ministry's arguments. Consequently, Derby decided to forward a copy of their Salisbury Committee memorandum directly to the Cabinet – in effect, trying to go above Lord Salisbury's head.[118] The Committee therefore had little option but to provide a concurrent interim report of their findings on the issue to the Government. Whether or not the Committee's findings would have been different if the Army had not forced their hand is unclear, but this pre-emption certainly did not act in the War Ministry's favour. On 30 June 1923, Lord Salisbury wrote to the Cabinet stating that: "The view of the Sub-Committee was to the effect that the [General

[116] UK National Archives, CAB 24/161, The Separate Existence of the Royal Air Force and the Air Ministry Scheme of Expansion for Home Defence: Memorandum by the Secretary of State for Air, 6 July 1923, 84.
[117] UK National Archives, CAB 24/161, The Separate Existence of the Royal Air Force and the Air Ministry Scheme of Expansion for Home Defence: Memorandum by the Secretary of State for Air, 6 July 1923, 85.
[118] UK National Archives, CAB 24/160, The Relative Status of the Army and the Royal Air Force: Memorandum by the Secretary of State for War, 28 June 1923, 599.

Staff's proposed] distribution of responsibility was unsatisfactory and that if the Air Forces of this country were to be developed to the utmost, it was necessary to retain the Royal Air Force as a separate service, and that progress would not be so great if the War Office proposals were adopted."[119]

Before the Cabinet reached a decision on Lord Salisbury's findings, they received another plea from Lord Derby's predecessor, Sir Laming Worthington-Evans. The arguments that he raised against continued RAF independence have their basis in those advanced by the War Office on previous occasions. However, some slightly different approaches were taken – perhaps because of exasperation on Sir Laming's part. The experienced Army advocate re-iterated concerns about RAF administrative services being a wasteful duplication of facilities already owned by the Army and the Navy. As an interesting aside, he suggested that the useful flying life of RAF aircrew was less than the combatant life of a soldier and prophesised that this would lead to the generation of excess staff jobs to give ex-aircrew something to do. In Sir Laming's opinion, control of the air was only required to facilitate Army actions on the ground and, hence, responsibility needed to be held by the Army. He did not stray explicitly into the area of homeland defence, where the RAF was winning the media battle at the time. Along a similar track, Sir Laming pointed out how coordination between ground and air forces was so critical that it needed to be controlled by one general staff. In fact, he went so far as to say that, for this reason, it was more important for the Army proposals to be approved than the Navy's.[120] When desperation took over, even unity between the Army and the Navy against their younger sibling was lost – the Army was determined to strangle the RAF.

The Cabinet met on 9 July 1923 to discuss the Salisbury Committee's interim findings and ratified the decision to retain the RAF and its current relationships with the British Army. The War Office's strength of opposition to this decision is clear from the original minutes contained in the UK National Archives. Lord Derby obviously did not feel that his dissent from the Cabinet's decision had been properly reflected in the initial

[119] UK National Archives, CAB 24/160, The Relations of the Army and the Royal Air Force: Memorandum by the Chairman of the Sub-Committee of the Committee of Imperial Defence on National and Imperial Defence, 30 June 1923, 13.
[120] UK National Archives, CAB/24/161, The Relations of the Army and the Royal Air Force: Memorandum by Sir Laming Worthington-Evans, 3 July 1923, 43-46.

record, so a small paper amendment has been stuck to the document. It reads: "in the course of [the discussion] the Secretary of State for War strongly advised against an Independent Air Ministry."[121] The RAF was almost at the point of guaranteed existence for the foreseeable future, assuming that its arguments were not defeated in the final round – the Naval Air debate in Lord Salisbury's final report.

Like the Army, the Admiralty was asked by the Salisbury Committee to present a written account of its position in early 1923. The memorandum that the Naval Staff produced used arguments based on the assumption that aircraft were there to support the fleet in the pursuit of victory in naval battles. This is very much in keeping with how British Army and Navy doctrine had always been – the land and maritime domains never really interacting with each other, as previously discussed. As the paper itself states, "the operations of the two older Services, in fact, overlap so little that each very naturally tends to confine itself to its own element."[122] The document also indicates that the Admiralty still saw itself as the most significant element in Britain's defenses, which could never surrender naval aircraft for homeland air defense. However, the Navy recognised that it could not defeat arguments in favour of an independent RAF – especially in light of public opinion about air defense. In fact, their paper specifically stated that there was, "a very strong case for an independent Air Service."[123] The Admiralty decided to strengthen their case for an organic air arm, which was no longer an existential threat to the junior Service.

The RAF now had a secure mandate to expand rapidly, on the strength of its air defence and independent force roles. Consequently, the separation of a naval element would no longer place the organization's existence in jeopardy. In effect, threats to the existence of an independent RAF were over before the final consolidated element of Lord Salisbury's report was published – only to raise their head in modern times. However, as a final glimpse into the past, it is worth looking at some of the Admiralty's arguments,

[121] UK National Archives, CAB 23/46, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, SW1 on Monday, 9th July, 1923, at 1130 AM, 96.
[122] UK National Archives, CAB 24/161, The Control of Naval Air Work: Memorandum by the First Lord of the Admiralty, 26 March 1923, 423.
[123] UK National Archives, CAB 24/161, The Control of Naval Air Work: Memorandum by the First Lord of the Admiralty, 26 March 1923, 423.

which appear close to the idea of gaining different *cognitive orientations* through *differentiation*. Unfortunately, they also show the detrimental effect of poor *integration*.

The Admiralty's main arguments in 1923 revolved around unity of command and purpose for air elements involved in naval activity. Their paper suggested that in naval action the Admiral concerned is the only one qualified to judge how, when and where to employ aircraft in support of his strategy. Consequently, the Navy considered it unworkable to have a senior RAF officer attached to the fleet – who did not understand naval warfare – directing air activity. The Naval Staff pointed out that everyone on board a ship had to contribute to the running of the vessel and they could not afford to make space for RAF personnel who were passengers when not flying. RAF personnel were said not to understand other aspects of life aboard and if they were dedicated to naval duties for long enough to become familiar they may as well be in the RN. Similarly, the Naval Staff asserted that naval air reconnaissance, torpedo attack and gunnery spotting were such specialist roles that, once trained, pilots involved in fleet duties would be of little use in other areas of the RAF. Only the air defense role was similar – but not the same - and it would form only a small element of some pilot's duties. The RN suggested that it would be impossible to support the development of air power at sea unless it could grow high-ranking naval officers with air experience. In the Admiralty's opinion, the solution lay in eventually having senior officers who had started their careers as naval aviators. [124]

Of course, at the time, the only purpose of aircraft at sea was to support naval battles. This was still the era of ship-on-ship warfare, before Pacific engagements in WWII had demonstrated the utility of aircraft carriers for power projection from the sea, rather than fleet support and defense. The fleet's role in British defense was seen as having primacy and, therefore, under no circumstances would aircraft or personnel allocated to the fleet ever be used for anything else other than supporting naval warfare. The paper specifically states that, "there is no conceivable emergency in which the Admiralty could possibly surrender what is a vital arm of the Fleet."[125]

---

[124] UK National Archives, CAB 24/161, The Control of Naval Air Work: Memorandum by the First Lord of the Admiralty, 26 March 1923, 422.
[125] UK National Archives, CAB 24/161, The Control of Naval Air Work: Memorandum by the First Lord of the Admiralty, 26 March 1923, 423.

The point that the Admiralty was trying to make in 1923 was that it required aviators who had a different perspective than those in the RAF. In the early days of naval flying they needed individuals with a deep understanding of maritime warfare and aviation to develop the aircraft carrier. Their situation was different from the Army, who did not have to develop technically complex moving airfields to obtain their airpower.

As an aside, naval airpower is utilised differently today in the UK. The RN and RAF both operate Harrier GR9 aircraft, as Joint Force Harrier, from land bases and embarked. Operationally, RAF personnel have proved themselves operating off HMS Illustrious during the Sierra Leone crisis in 2000. Similarly, RN squadrons have operated from Kandahar in Afghanistan.[126]

Returning to 1923, using terminology from organizational theory, the Navy saw the route to innovation as further *differentiation* – creating their own cadre of airmen with a different cognitive orientation. However, what they were arguing for was *differentiation* (forming a new sub-element) without *integration* (the linkages between it and the RAF necessary for optimal success). As we have discussed, *differentiation* incurs additional costs (reduced efficiency), so it has to be balanced by the benefits of improved effectiveness. That effectiveness only comes from successful *integration* with sub-elements that are critical to the task.

Ultimately, Lord Salisbury rejected the RN proposals in his final report and the RAF remained independent, with primacy over all air activities.[127] So was it the right decision, given that the need for a Navy controlled Fleet Air Arm (FAA) was recognised in 1937? The RN went from a position of superiority to the USN in aircraft carrier design and operations in 1919 to one of inferiority by 1929. As WWII began, RN carriers were not capable of rapidly launching the large concentrations of aircraft necessary for defense against other nations' aviation. They were also slow to make use of the advent of Radar to assist in their defense. Uncertainty in the Admiralty about the types of aircraft required and how best to operate them led to sub-optimal solutions. For

---

[126] Kim Sengupta, "Awesome show of strength for 'minimum force'", *Independent (London),* 16 May 2000 and Michael Smith, "Top Gun takes on Taliban upside down", *Sunday Times (London),* 31 May 2009. http://www.independent.co.uk/news/world/africa/awesome-show-of-strength-for-minimum-force-718974.html and http://www.timesonline.co.uk/tol/news/world/asia/article6395819.ece (accessed 19 May 2010).

[127] UK National Archives CAB 24/162, Report of Sub-Committee on National and Imperial Defence, 15 November 1923, 478-482.

example, rejecting the concept of arresting gear seriously limited the types of aircraft that could be embarked. Historians have differing opinions on whether or not this was indicative of leaving the RAF in ultimate control of the Fleet aviation.[128] In truth, there were two potential routes to success: RAF aviators closely *integrated* with maritime experts or a Navy controlled FAA closely *integrated* into RAF airpower developments. The relationship that did develop between the RN and the RAF ensured that neither occurred.

Salisbury's report showed that, in effect, naval aviation was already operating separately, despite nominal RAF command. Most flying personnel remained with the fleet full time and the more senior ones had started their careers as naval officers in the Royal Naval Air Service. They were subject to naval routine and discipline on-board and were under the command of the naval Commander-in-Chief. The Admiralty decided on specifications for all of their aircraft and the RAF simply looked after procurement. The Salisbury committee believed that all that was required were better systems to *integrate* the RAF and the RN with respect to maritime aviation – consistent with contingency theory. [129] Had the Navy been given control of the FAA, theory tells us that the optimal solution would still have required close *integration* between it and the RAF (the main innovators in air matters). US Navy aviation faced similar challenges to the RN, even though it was Navy commanded. However, it could afford to set itself up as a totally separate air force, with its own Bureau of Aeronautics (akin to the Air Ministry). That was never a serious option for the UK, which had to balance effectiveness and efficiency more carefully.[130]

Unfortunately, the RAF did not take enough interest in its embarked element and personnel serving with the RN did not interface with their flying peers to cross-fertilise ideas. Perhaps if they had done so, the advantages of Radar and the possibilities of power projection from the sea would have become evident sooner. However, the naval perspective on the role of airpower may have suppressed thinking outside their cognitive

---

[128] Thomas C. Hone, Norman Friedman and Mark D. Mandales, *American & British Aircraft Carrier Development 1919-1941* (Annapolis, MD: Naval Institute Press, 2009), 83-105.
[129] UK National Archives CAB 24/162, Report of Sub-Committee on National and Imperial Defence, 15 November 1923, 480-481.
[130] The US recognizes that it pays a financial and inter-operability price for duplication between its totally separate air organizations. The drive towards Jointery, since the Goldwater-Nichols Defense Reorganization Act was passed in 1986, has attempted to address this.

boundaries anyway. In that sense, even with a Navy commanded FAA, air innovation may have been stifled by the parent Service – as Smuts predicted. What is certain is that whichever model was adopted, it was always going to be sub-optimal without close *integration* – as air/land relationships have also illustrated. The difference is that a naval controlled FAA would have cost more – as an independent RAF probably costs more. The challenge is to balance that cost against the benefits obtained to see whether the efficiency versus effectiveness decision is appropriate.

Chapter 4

The Here and Now

The Key Arguments

Those readers who are well acquainted with contemporary UK defense issues will have recognized that the main points of debate in the 1920s still resonate today. We have addressed some of these issues previously in this paper, but this chapter will draw everything together using the lenses of efficiency and effectiveness. As stated at the beginning of this work, by looking at the broad and enduring questions the hope is to develop some answers that are as independent as possible from short-term debates about ownership of equipment or disputed roles. Contemporary arguments about RAF independence raised in recent media articles, like those mentioned in the introduction, or even discussed in related blogs and chat-rooms, can be distilled into a few broad categories, which correlate well with the 1920s debate. Despite advances in technology and changes to the international security situation, the key arguments remain the same, with the addition of one – operating in coalitions. Of course, we do not have access to inter-service correspondence within today's MOD. However, elements of the dialogue that have emerged through speeches, press reports and the author's informal discussions with colleagues, suggest that only the coalition question is new – other arguments are simply variations on old themes. The table below shows the enduring questions that we will consider, which constitute the bulk of the debate about the independent RAF's future – just as they did in the 1920s.

Table 1: Enduring Questions about RAF Independence

EFFICIENCY		EFFECTIVENESS	
Duplication	Having another Service results in wasteful duplication	Independent Action	Other Services would constrain airpower purely to their direct support
Overheads	Having another Service creates an administrative overhead that could be saved	UK Air Defense	Other Services would prioritize other roles to the detriment of homeland air defense
		Coalitions	Having an independent

		RAF optimizes benefits for the UK in coalition operations.
	Army and Navy Support	Transferring RAF assets into the Army and Navy would provide them with more effective support

Efficiency and effectiveness elements will be considered in turn, to determine whether the relative cost of RAF independence is offset by the benefits that it brings. Of course, there are efficiency elements in the effectiveness arguments and vice-versa, which will be considered in the text. Similarly, there are inextricable linkages between the categories, so an effectiveness advantage in one area may lead to a disproportionate disadvantage in another. During our discussion, it is also important to remember that, as a starting point, standing guidance from the UK Government is to configure for uncertainty and to assume that extant Defence Planning Assumptions will remain.

Efficiency

Duplication

As mentioned previously in this paper, since the 1998 Strategic Defence Review the UK armed forces have been progressively combining single-service support functions into Joint organizations. Contingency theory showed us that this is a successful approach, provided it is limited to areas where uncertainty can be managed. As we discussed, where levels of uncertainty that could affect operational effectiveness do exist, the Services have implemented *integration* measures. For example, the critical Defence Equipment and Support area has embedded Service personnel to ensure that operational requirements are addressed. The reason why these individuals can provide this *integrating* function is because they are cognitively immersed in their Service – they grew up in its culture and they instinctively understand its requirements. Areas where the work is predictable have also been combined, into Joint agencies with few Service *integrators.* Even pay, pensions and allowances are now managed centrally for all three Services.

Areas of training that can be combined, like elementary flying training, basic helicopter training, catering training, medical training and many other examples are conducted jointly. The areas that contribute to providing each Service with its different cognitive orientation, like initial officer training and basic recruit training have not been combined and these will be discussed later.

Duplication of equipment requirements is prevented by the MOD Equipment Capability areas. Representatives from all three Services decide what equipment is required to meet a UK defense requirement and which Service will field it. If equipment is required by all three Services, the aim is to purchase the same item for everyone – maximizing interoperability and reducing support costs.

Unlike problems that the US military have, each of the British armed forces now contains very little that is duplicated in another Service. Where possible duplication exists, such as aircraft technical training, plans are already in place to address it. From the position that the UK military is in today, it is unlikely that dividing RAF functions between the other Services would have any impact in terms of duplication. If all roles and capabilities were maintained then the duties of RAF personnel in Joint areas would still have to be undertaken - even if the post incumbent's uniform and cognitive perspective changed. In short, duplication is not really an issue in the contemporary debate.

Overheads

The only functions that are truly retained by the individual Services in the UK are organizing and training their forces, before handing them off to the Commander Joint Operations for employment. The organization element includes front-line forces, their bases and direct support elements. Each Service also has a command headquarters and a small single-Service staff in the MOD. Training consists of exercises and combat work-ups for front-line forces and the single-Service initial training mentioned in the previous section. Everything else is Joint and covered under duplication. Even some of the front-line functions are Joint, like Joint Helicopter Command and Joint Force Harrier. Basing has been, or is being, reduced to the minimum – sometimes with different Services sharing a base where there is space.

If the British Army and RN were to take over the RAF's roles and missions they would have little if any flexibility to make savings in terms of front-line equipment, infrastructure or personnel. Of course, they could decide to take more risk in some areas, like air defense, in order to place funding in areas they considered to be higher priorities – as we will discuss later. They could also promise that they could do the same with less. The bulk of personnel on the RAF front-line are involved in logistic support for aircraft, so this is a potential savings area. However, there is little evidence – when making reasonable comparisons – that less Army personnel are required to support a complex aircraft than RAF personnel. The closest comparison possible, in terms of technological age and complexity, is between Eurofighter Typhoon and Apache. Typhoon is undoubtedly more complex, but for the purposes of this example we will allow the RAF to start with a disadvantage. There are nearly 100 personnel of all trade specializations on a UK Apache squadron to support eight aircraft, which require approximately 30 man-hours of maintenance per flying hour.[1] An RAF Typhoon squadron has nearly 150 personnel of all trade specializations supporting twelve aircraft, which require approximately 34 man-hours of maintenance per flying hour.[2] Even basic mathematics shows that manning levels are comparable – certainly with no indication that an Army-run Typhoon squadron would be more efficient. Similarly, experience in Joint Force Harrier has shown that manpower figures for RAF and RN personnel operating Harrier GR9 aircraft are equivalent. In short, disbanding the RAF would not create any real efficiencies in the front-line.

The only areas left to look at are single-Service headquarters staff and single-Service training. Looking at the headquarters first, it is clear that a future air organization would require a staff to run it, even if they wore a different uniform. However, it is reasonable to expect some reductions in staff, due to functions that could be amalgamated with those in Army or RN headquarters, which we will explore. Of course, there would probably be rank reductions in the senior hierarchy if they were subordinated to Army or RN commanders. It is also tempting to say that the Air Command headquarters site could

[1] Ed Macy, *Apache – Inside the Cockpit of the World's Most Deadly Fighting Machine* (New York, NY: Atlantic Monthly Press, 2008), 45.
[2] E-Mail from SO3 Eng Integrated Typhoon Operations Centre, Headquarters 1 Group, RAF on 19 May 2010.

be closed and the relevant staff officers moved to Fleet or Land Command. However, all three Services have recently reduced their headquarters sites down to one, cramming people into every available space. It is, therefore, unlikely that this could be done without incurring costs that negate the savings. We are left with savings associated with losing the entire single-Service staff in London and a proportion of the Air Command headquarters personnel. It is difficult to assess how many staff would be lost in Air Command, given that many of them are involved in directly supporting front-line activities. Regardless of what uniforms they wore, individuals would still require career management; flying activities would still have to be controlled; liaison with coalition partner's air forces would still be required, among many other activities. Splitting air activities between the Army *and* the RN may actually increase the manpower requirement, as additional personnel are needed to coordinate activity previously carried out by one organization. However, for the purposes of this exercise a manpower saving of 5% in Air Command and the whole of the single-Service Air Staff in London has been assumed - which is generous to the disbandment camp.[3] This would generate annual savings of approximately £12M per year.[4]

---

[3] It is important to note that previous HQ amalgamation work (like when Land, Fleet and Air became single HQ sites) have involved over a year of work by dedicated study teams to calculate which posts are retained. This figure (5%) is used to illustrate the author's idea of the absolute maximum saving that could be obtained – to the benefit of an RAF abolition argument. It has been assumed that all front-line support air staffs would remain, but 1 Gp and 2 Gp would amalgamate. A significant portion of the budget staff would be removed, as the Air Top Level Budget would go to Land/Fleet, without many additional staff requirements. Manning staff would remain, but single-Service policy staff would go. The HQ would be run by a single 3* with 2* areas below. Integration organizations like Joint Air Land and Joint Air Maritime would no longer be required, but only their RAF personnel are a saving. Some long-range planning staff from Support Policy and Plans would have their jobs subsumed by personnel at Land and Fleet. All single-Service staff in MOD would go. This equates to 5% of Air Command and single-Service staff in MOD. Personnel figures derived from information obtained from: E-Mail from Head of Central Analysis Team, Resource Management Hub, Headquarters UK Air Command on 21 May 2010 and E-mail from Air Command Briefing and Coordination Team on 24 May 2010. **These figures are illustrative to demonstrate order of magnitude only. They are biased on the high side, so detailed study would be required to determine actual savings.**

[4] E-Mail from Head of Central Analysis Team, Resource Management Hub, Headquarters UK Air Command on 21 May 2010 and telephone conversations with Head of Resource Management Hub, UK Air Command on 17, 19 and 26 May 2010. Figures used reflect personnel at High Wycombe site and Air Staff in Ministry of Defence. Capitation rates reflect current pay, pension and National Insurance calculations. Average rates used for headquarters staff - Sqn Ldr, JNCO and Civil Servant at EO grade. **More in depth analysis would be required by expert staff to assess actual savings. These figures are used to determine likely order of magnitude.**

The last element to consider is single-Service training, which includes Initial Officer Training at RAF College Cranwell and Basic Recruit Training at RAF Halton. The RAF Regiment carry out their own basic training, but this entire training organization would be subsumed into the British Army, generating no savings. A significant proportion of other RAF officer training and recruit training would have to be subsumed into Army and RN training schools. As previously demonstrated, the number of Army or RN personnel need to fill posts previously manned by the RAF would not be significantly reduced. Therefore, Army and RN training levels would have to rise as the RAF establishments closed. It is also assumed that RAF recruiting activities would cease, so some of the budget associated with that would be saved. However, as with training, some personnel and funding would have to transfer to the other Services, to increase their recruiting efforts. Again, a manpower saving of 12% is assumed across all areas, which is weighted in favor of those who advocate disbanding the RAF.[5] It is also assumed that the RAF College and much of RAF Halton would close, realizing some savings in running costs. However, these type of figures are always dangerous to estimate, because there will be increased costs at the other Service training establishments and costs associated with transferring parts of the estates to other users. It is, therefore, assumed that 30% of the annual running costs would be saved – again biased on the high side.[6] The estimated savings from recruitment and training (including running costs) if the RAF was disbanded are, therefore, £21M.[7]

---

[5] This figure (12%) is used to illustrate the author's idea of the absolute maximum saving that could be obtained – to the benefit of an RAF abolition argument. It is based on the assumption that only senior management personnel and some administrative staff would we lost from officer and recruit training. All other staff would move to support increase in army and navy. RAF currently does aircrew selection for army and navy, so only RAF officer selection lost. In recruiting, central staff reduced slightly and transferred to army and navy. Officer posts removed in Armed Forces Careers Offices, but other posts remain to assist army and navy higher recruiting requirements. This equates to about 86 posts, mostly at Flt Lt and Cpl level, with some civilians. It is weighted heavily in the recruiting area.

[6] Closest example, predictions for closure of RAF Lyneham and moving whole task to RAF Brize Norton. This project anticipated to save 10% annual running costs initially and possibly 15% once site sold. Giving maximum benefit to abolition argument, author has doubled this to 30% to illustrate how small savings really are. Figures obtained during telephone conversations with Head of Resource Management Hub, UK Air Command on 26 May 2010.

[7] E-Mail from SO1 SPP, Headquarters 22(Training) Group, RAF on 18 May 2010 and telephone conversations with Head of Resource Management Hub, UK Air Command on 19, 20 and 26 May 2010. Figures used reflect personnel employed in officer training, recruiting and selection and recruit training at RAF Cranwell, RAF Halton and Armed Forces Careers Offices nationwide. Capitation rates reflect current

In conclusion, the annual running costs for maintaining RAF independence is in the region of £33M. However, to put it into context, that equates to less than 0.1% of the UK's annual defense budget.[8] Put another way that is less than £1 per UK taxpayer per year.[9] Now that we have some idea of the price of RAF independence, we can move on to look at its value – or effectiveness.

Effectiveness

Effectiveness is far more difficult to quantify than efficiency, which is why accountants often favor the latter at the expense of the former. This was the problem that the Service chiefs encountered with Geddes during his 1921 spending review. However, contingency theory has already shown us the optimum structure for organizations that reside in uncertain environments. In the current UK armed forces structure, single-service training and organizations provide the different cognitive orientations necessary for optimum performance in Joint warfighting. However, as we have discussed, the issue is not just what the optimum solution is, but what the UK can afford. We have an idea of the price, so we need to explore further whether it is worth spending. As previously stated, many of the effectiveness questions have interdependencies and intrinsic efficiency elements that we must take into consideration.

Independent Action

The question of independent action seems to be an easy one for critics to discount, especially if they believe that the future will be dominated by counter-insurgency warfare. However, it is more useful to think about independent action in its broadest sense – as Smuts may have intended. It is really more about independent thought – not constrained by subordination to another Service – than an actual activity. As we saw in examples from the 1920s, Army and Navy thinking about airpower was constrained to immediate support of their environments. They were not thinking about how aircraft

---

pay, pension and National Insurance calculations. Average rates used for staff – Sqn Ldr and Sgt in officer training, Flt Lt and Cpl in recruiting, Sqn Ldr and Cpl in selection and Flt Lt and Cpl in recruit training. All Civil Servants at AO grade. More in depth analysis would be required by expert staff to assess actual savings – these are an educated estimate. Total annual running costs for recruiting, selection and single-Service training, including infrastructure at Cranwell and Halton are roughly £56M.

[8] Based on 2010-2011 Ministry of Defence Departmental Spending Limit of £36, 890M. http://www.mod.uk/defenceinternet/aboutdefence/organisation/keyfactsaboutdefence/defencespending.htm (accessed 10 May 2010).

[9] Based on 2010-2011 taxpayer figure of 30.6 Million. HM Revenue and Customs, "Number of Taxpayers and Registered Traders." http://www.hmrc.gov.uk/stats/tax_receipts/table1-4.pdf (accessed 10 May 2010).

could be employed a considerable distance away from the battlefield or the fleet to influence the outcome of their operations in the weeks or months ahead. Although the Joint Force Harrier concept has altered naval perceptions, members of the British Army are still – quite appropriately – fixated on their immediate environment. Brigadier Robert Weighill admits that soldiers are, "for the most part focused in tactical and operational planning and execution, and [they] do it within a relatively small area of operations in which [they] strive to reduce ambiguity and understand the environment."[10] He further accepts that today those who think the RAF should be subordinated to the Army do not realise that, "it would become tactically transfixed, unable to independently achieve strategic effect and be constrained across the Joint and Combined arena."[11] However, it is not subordination of assets that is the real concern; it is subordination of the minds of airmen, denying the Joint force alternative thinking.

In truth, would a group of Army officers in a Joint equipment appointment advocate funding a replacement strategic ELINT platform over a bulk-buy of tactical Remotely Piloted Vehicles? Without the balancing influence of another Service that thinks differently, capabilities that operate away from the battlefield but make a significant contribution to campaign success may be lost. If all of the decision making group come from the same cognitive background there is a real danger of groupthink. Irving Janis points out that groupthink generally results in, "defective decision-making."[12]

Stifling any Service's search for innovative ways to support the Joint campaign is foolhardy in an uncertain environment. Independent thinking by a soldier, sailor or airman may provide just the option that the Government has been searching for – like Trenchard's concept of air policing in the 1920s. The first Chief of the Air Staff was not constrained to think about problems from a land perspective. None of Wilson's soldiers would have developed or proposed the plan, because it affected core Army business – troop numbers. During the Falklands War, no Army or Navy officer would have developed or advocated the concept of flying aging Vulcan aircraft 8,000 nautical miles,

[10] Brigadier Rob Weighill, "Air/Land Integration – The View from Mars", *RUSI Defence Systems*, February 2009, 53.
[11] Brigadier Weighill, "Air/Land Integration", 55.
[12] Irving L. Janis, *Groupthink* (Boston, MA: Houghton Mifflin, 1982), 175.

using eleven air-refuelling tankers, to bomb the island's airfield. Even though Operation Black Buck had limited tactical success, it made the Argentineans realise that their mainland was at risk. As a result, they moved their Mirage fighters north, out of range of the Falkland Islands, reducing the threat to the UK's pivotal but small number of Harrier aircraft.[13] In an uncertain world, the Government needs options. As contingency theory shows us, innovation comes from cognitive diversity. You cannot grow someone who *thinks* like a member of the Parachute Regiment by raising him in the RAF. Equally, you cannot grow someone who *thinks* about innovative ways to use airpower away from the battlefield if their thinking is subordinated to that of another Service.

UK Air Defense

The issue of UK air defense has been explored throughout this paper. We have established that no Government can afford to ignore it, because of the consequences of making the wrong decision. Ultimately, the first priority of the defense establishment must be to protect citizens from direct military threats against the homeland. In the absence of any law enforcement capabilities that can counter rogue aircraft; the military must fulfill that requirement. It has also become clear that the other Services considered UK air defense to be a lower priority when they held the responsibility in WWI – leading directly to the RAF's formation. However, what are the present day indicators that the UK needs an RAF to afford this task the priority it deserves?

Much of the contemporary criticism of the RAF is leveled at the amount of money invested in its newest aircraft – Typhoon. Many in the British Army view this purchase as removing funding from vital equipment that they need for the current fight. The truth is, as we have discussed, in an uncertain world we need capabilities and minds that are flexible enough to adapt to unpredictable threats. Yes, Typhoon is expensive, but it is a multi-role platform that can be used in counter-insurgency warfare, conventional warfare and homeland air defense. If the UK focused solely on close air support in counter-insurgency warfare the ideal solution would be to purchase aircraft like the Super

[13] Rowland White, *Vulcan 607 – The Epic Story of the Most Remarkable British Air Attack since WWII* (London, UK: Bantam Press, 2006), 364.

Tucano, as the head of the British Army has advocated.[14] However, how would the country adapt its Super Tucanos to defend its airspace or to participate in operations like the Falklands, the Gulf War or Kosovo? In the face of budgetary pressures and an analysis of likely threats, the RN gave up its main fleet air defense capability – the Sea Harrier – in 2007.[15]

The RAF is configuring for flexibility in an uncertain environment in a different way than the other Services would prioritize airpower roles. The UK needs the balance that all three Services bring to the debate, to ensure that there are advocates for vital tasks like UK air defense when tough economic choices are made. As Paul Cornish of Chatham House was quoted as saying: "It would be absurdly non-strategic to suggest that as no RAF aircraft has intentionally shot down another aircraft since 1948, there is no need for the United Kingdom to have an air defence capability."[16]

Coalition Operations

The recent *Defence Green Paper* suggests that operating with international defense alliances and coalitions will become an increasingly important element of UK defense policy.[17] Many countries in the world, and certainly the major actors in any coalition the UK would join, have an independent air force. Most importantly, our major ally, the United States, has an independent air force. The UK gains considerable influence in coalition air operations from the RAF's close relationship with the USAF. In recent conflicts, this has often led to an RAF officer assuming the role of Combined Air Operations Centre (CAOC) Director – controlling all coalition air activities during mission execution. Although UK troops believe that the RAF is only supporting them when an RAF aircraft is tasked against their Joint Tactical Air Request, the likelihood is that UK airmen have participated in the process in the CAOC or other air operations centers.

---

[14] Tom Coghlan, "RAF urged to cut 'Cold War' new jets for cheap propeller aircraft", Times (London), 22 January 2010. http://www.timesonline.co.uk/tol/news/world/afghanistan/article6997720.ece (accessed 28 January 2010).
[15] House of Commons Defence Committee, *Fourth Report of Session 2001-02*, 29-36.
[16] Tom Coghlan, "Future of Defence part three- the RAF", *Times (London)*, 3 February 2010 http://www.timesonline.co.uk/tol/news/politics/article7012792.ece (accessed 10 May 2010).
[17] Secretary of State for Defence, *Adaptability and Partnership: Issues for the Strategic Defence Review*, (Norwich, UK: TSO, 2010), 32-34.

Without UK personnel who have a shared cognitive orientation with USAF colleagues it is unlikely that the same level of influence could be maintained. It is difficult to foresee at situation where an Army Air Corp or FAA 1* would be invited by the USAF to be a CAOC Director. In this context, the lack of an independent RAF would be detrimental in terms of military and political relationships.

Army and Navy Support

The question of Army and Navy support as it has been posed in this chapter is really the centerpiece of contemporary arguments. The answer to this question draws on elements from all of the others. We have established that transferring all of the RAF's roles and missions to the other Services would probably result in a cost saving. However, what would be the impact in term of effectiveness.

The British Army would no doubt feel that they would benefit from being able to construct a USMC type model, with guaranteed organic support. However, who would provide air defense for them in anything but a benign environment? Perhaps coalition partners would, but they might expect some of that organic air to be given to the CFACC in return. As such, they would enter into the same disagreements that the USMC has, but as a minor coalition with no friendly UK officers in the CAOC to help them. The RN may be able to assist, if they have sufficient air-refueling tanker support to reach the fight from the sea. Land basing is unlikely to be the preferred option for the FAA if they had their own assets permanently on carriers.

Basing the aircraft on land would negate the requirement for the carrier in that operation – endangering their raison d'être in times of financial scarcity. As previously discussed, the RN would also have to provide UK air defense cover – probably precluding the deployment of additional assets to backfill the carrier. That, of course, assumes that the UK air defense aircraft could be embarked. If they were still Typhoons they could not be, presenting the RN with an institutional problem. They would have to train RN pilots to fly solely land-based aircraft in a solely UK air defense role – not the sort of variety that usually retains expensive aircrew. Converting them to different platforms to add variety would also increase costs. Perhaps the British Army and RN could share the UK air defense role? However, by this time the Army would presumably be flying Super Tucanos. Dedicating Typhoon solely to air defense would be extremely

wasteful of a multi-role platform, so perhaps the Army would deploy and use it organically. However, holding a Typhoon - which could support so many ground units over a huge area - constrained to the maneuver radius of its Brigade would deny vital support to others who needed it. Although this scenario is slightly contrived, it does highlight a few of the issues that would be encountered without the RAF. However, as previously mentioned, the biggest impact on UK defense would come from a reduction in innovation and options.

In an uncertain world, the Government will need all the ideas that it can get when the unexpected happens. The variety of options that can be produced by three independent thinkers exceeds those that can be generated by two. This is especially true if the third one, in the words of Brigadier Weighill, is more, "conscious of and striv[ing] for strategic effect[s]."[18]

Balancing

We have established that the potential efficiency saving for removing RAF independence is in the region of £1 for each taxpayer per year. This, therefore, needs to be balanced against the additional effectiveness that UK defense gains from having a third Service. In other words, *differentiation* costs us more – as predicted – but is that additional cost worth it for the *flexibility* necessary to overcome *uncertainty*? We also need to consider the other aspect of organizational theory – the *integration* of *differentiated* elements for optimal success.

Because airmen are grown in a different Service environment than their Army and Navy colleagues they think differently – they have a different *cognitive and emotional orientation*. They are thinking about ways to employ air power away from the line-of-troops or the fleet to influence tactical, operational or strategic outcomes next week, next month or next year. They are thinking about how best to defend the UK against threats from the air – wherever and whenever they come, in an uncertain world. They are gaining influence with the UK's strongest allies, through shared trust and understanding with fellow independent airmen. They are focused on innovating and developing every aspect of the air domain to provide alternative options for the Joint team – options that

[18] Brigadier Weighill, "Air/Land Integration", 54.

soldiers and sailors are pre-disposed not to find, because of their different cognitive orientations.

For less than £1 per taxpayer per year, the whole of UK defense gets alternative thoughts, approaches and options to counter an uncertain world. Policy makers receive greater flexibility in potential approaches and options to meet future security tasks, just as they did after WWI. The strength of Jointery comes from the diversity of the members of the team. A Joint team with only two sets of ideas has less capacity for innovation than one with three. The UK needs all the innovation it can get, to cope with uncertainty in a resource constrained environment. If we want to spend what little we have smartly, on balance, the independent RAF looks like a good investment.

Conclusion

The United Kingdom (UK) is conducting a Strategic Defence Review in the midst of a global financial crisis and while supporting enduring counter-insurgency operations in Afghanistan. Recent media articles have suggested that the Royal Air Force (RAF), formed in 1918, should be disbanded to save money and optimize support to current operations. This paper warns against the Oscar Wilde paradigm – of knowing the price of everything, but the value of nothing. The RAF brings more to the fight than just equipment and personnel that can be toted on a balance sheet – it contributes a different perspective to the Joint team. The strength of Jointery only comes from diversity, with different ideas and approaches creating flexibility and strengthening our ability to cope with uncertainty. Reducing the number of Services may appear efficient, but stifling diversity of thought can cripple operational effectiveness. The independent RAF continues to provide the optimum balance between efficiency and effectiveness in an uncertain world, but inter-service rivalries, driven by economic factors, muddy the waters for decision-makers.

Even the most vehement critics of RAF independence recognise that air power has become a critical component of success in modern warfare. The issue is, therefore, not one of whether UK defense needs it, but how to organize to deliver it – three Services or two. Strategic guidance from the UK Government requires its armed forces to be able to operate in an uncertain world. However, when you do not know what the threat is or where it might come from protecting the nation can be extremely challenging. What equipment do you buy, what scenarios do you train for? The answer is that you have to configure your forces with sufficient flexibility to cope with anything. Unfortunately, that is expensive – buying a whole host of equipment that may never be used. Intelligence about possible threats can narrow things down for you, but what if it is wrong? Faced with continued uncertainty about the threat and insufficient resources for a broad enough range of capabilities to match every scenario, you have to *think*.

The contingency theory of organizations provides some useful guidance on the best way to structure for success in an uncertain environment. Overcoming uncertainty requires innovation and initiative, which, in the opinion of contingency theorists, results from *differentiation*. *Differentiation* involves splitting the organization into sub-elements

where individuals grow to have different *cognitive and emotional orientations*. In short, they think differently and have a different perspective on problems than individuals in other sub-elements. However, that is not the whole story. For optimal success in an uncertain environment, *differentiated* sub-elements have to develop robust systems of cooperation with sub-elements they must interact with to complete the task. The development of these systems of cooperation is call *integration*. The problem is that *differentiating* is more expensive than having a centralized organization. Therefore, we need to compromise by *differentiating* in areas of high uncertainty and centralizing in those elements that do not – still maintaining high degrees of integration between dependent sub-elements.

The current structure of UK defense is optimal in terms of contingency theory. The independent Services are *differentiated*, inculcating a different culture, ethos and way of thinking in their personnel. In the most uncertain environment they will encounter – during combat – they are brought together under a Joint commander. *Integrating* in this way is the ideal solution, combining specialists who are free to think independently into a multi-disciplinary team. Even greater *integration* is employed, using liaison officers to further improve the linkages and cross-fertilization of ideas. Areas in defense that experience less uncertainty, like the Defence Vetting Agency, have been centralized, to optimize efficiency.

So, with a system already optimized for innovation and creating success using the capabilities that it has, why change? The issue is economics and looking to centralize further to save money. In our case, this means the amalgamation of the RAF into the other Services. It is clear that this would result in a reduction in flexibility and our ability to overcome uncertainty. However, it may be that the Government is willing to accept that risk in order to save money. In the end, decision-makers will have to balance the efficiency savings they hope to make against the potential loss of operational effectiveness.

The primary role of the Government is to provide security for its people, but it has to balance this task against looking after their welfare and promoting their prosperity. The money that it spends on defense is money that cannot be invested elsewhere. When the perceived threat to security is high, defense spending has primary emphasis.

However, when the threat level is thought to be low, defense will take a back seat to other programs. The lower defense spending is the more risk the Government will have to take in some areas. By not funding certain capabilities, they are hoping that no threats appear that cannot be countered without them. Decision-makers choose what to fund and what not to fund based on intelligence assessments of the risk, but also in terms of the potential consequences of getting it wrong. Intelligence may say that the likelihood of a certain threat appearing is low, but if the consequences would be unacceptable if it does the countermeasure may have to be funded.

There is also the inter-service rivalry factor to take into account. The Government relies on expert advice from the Services to help them decided what to save money on and where to spend. Each Service will have a natural propensity to protect its own existence, sometimes leading to advice that is good for them, rather than good for the country. This is often not even deliberate, but an honest belief that fulfilling their Service's needs is what is best for the nation. Inter-service rivalry is an important factor for the policy maker to watch for, lest one voice starts to dominate the others, causing him to take risk in the wrong areas.

In this paper, we examined the plight of the embryonic RAF in the 1920s, as a vehicle for highlighting the many issues discussed above. To determine whether the effectiveness of the independent RAF outweighs any potential efficiency saving, we needed to know what questions to ask. By correlating questions asked by the contemporary media with 1920s challenges a set of enduring concerns were derived. These are independent of fleeting arguments about who should own specific roles and missions – they get to the heart of the issue of RAF independence.

On the efficiency side of our balance, the enduring complaints were that RAF independence creates duplication and that it incurs an administrative cost overhead. In the modern era of Jointery, it was discovered that duplication is not a significant issue. Those elements that *can* centralize *have*, or they are in the process of doing so, as contingency theory advocates. Because of this centralization of common functions, only critical and unique roles and missions remain within each of the services. Given extant Government direction to maintain these critical roles and missions, the only savings from RAF abolition would come from downsizing the headquarters for the air element and

closing single-Service training and recruiting. The price of RAF independence was determined to be approximately £1 per year per UK taxpayer.

On the opposite side of the scales, sit effectiveness factors like: independent air action, homeland air defence, coalition operations and Army and Navy support. In short, the analysis shows that the UK needs people who think about innovative ways to employ airpower away from the line-of-troops or fleet, to affect tactical, operational or strategic outcomes days, weeks or months in the future. It also needs people who can afford the defense of UK airspace the priority that it demands. Even when the threat is low, the consequences for the Government of losing control of its sovereign airspace could be catastrophic. The political influence that the UK gains from being a key member of US-led coalitions is significant and benefits the country in terms of world standing. The depth of our relationship with the USAF, to the point of filling CAOC Director posts, relies on mutual trust and a shared bond as independent airmen. Finally, even if the Army or Navy believe that they would obtain better support with organic airpower and no RAF, the nation would soon discover its error.

It is only natural that officers subordinated to fleet or land commanders would constrain their thinking to those domains. Certainly, airmen can be accused of a domain fixation of their own. However, the strength of UK defense lies in the fact that these different cognitive perspectives come together in the Joint fight and provide the Government with a host of flexible options. Soldiers and sailors will not focus on the use of airpower away from their cognitive realm, any more than an airman concentrates on understanding the tribal customs of villagers that he flies over. Similarly, UK air defense will not attract the same priority for a sailor worried about capability reductions in the fleet. Relationships with the USAF may seem to be an easy fix, but it will be more difficult for the commander of British Army organic airpower – not released to the CFACC – to have influence over other air operations he requires. He only needs to ask his USMC colleagues about who provides their air defense – the USAF.

The UK needs people who are free to think and innovate in the use of airpower, to overcome the equipment constraints that they will inevitably face. If you only have £33M to spend, it is better to invest it in people who extract every ounce of capability from your existing equipment for the Joint fight than in specialist equipment for one type

of warfare. Everything points to *cognitive diversity* as the key to success in an uncertain world. To reiterate a previous comment, you cannot grow someone who *thinks* like a member of the Parachute Regiment by raising him in the RAF. Equally, you cannot grow someone who *thinks* about innovative ways to use airpower away from the battlefield if their thinking is subordinated to that of another Service.

The recommendations from this paper are simple:

a. Maintain an independent RAF to guarantee the thinking and innovation necessary to provide flexible options and solutions for the Joint fight in an uncertain world.

b. Never make the mistake in the interests of Jointery of removing the training and education that makes an airman an airman. The reason why they represent such a valuable force in British defense is because they think like airmen – if they adopt the culture and ethos of another Service their unique and independent thinking utility is lost.

The RAF makes a vital contribution to the defense of the UK that far outweighs the cost of its independence. Those who are tempted to save £1 for each taxpayer every year would have earned Oscar Wilde's contempt, becoming those that know the price of everything and the value of nothing.

Bibliography

Articles

Ashburton Guardian, New Zealand. "Aeroplane in War", 22 November 1921.

Barnwell, Matt. "Major attacks useless RAF in leaked e-mails," *Telegraph (London)*, 23 September 2006, http://www.telegraph.co.uk/news/worldnews/1529620/Major-attacks-useless-RAF-in-leaked-e-mails.html (accessed 19 November 2009).

Beale, Jonathan, "RAF fighter jets scrambled amid terror plot fears", BBC News, 29 March 2010. http://news.bbc.co.uk/2/hi/uk_news/politics/8592070.stm (accessed 29 March 2010).

Coghan, Tom. "RAF urged to cut 'Cold War' new jets for cheap propeller aircraft" *Times (London)*, 22 January 2010. http://www.timesonline.co.uk/tol/news/world/afghanistan/article6997720.ece (accessed 28 January 2010).

Coghan, Tom. "Future of Defence part three- the RAF", *Times (London)*, 3 February 2010. http://www.timesonline.co.uk/tol/news/politics/article7012792.ece (accessed 10 May 2010).

Cornish, Paul and Dorman, Andrew, "Blair's wars and Brown's budgets: from Strategic Defence Review to strategic decay in less than a decade," *International Affairs 85: 2 (2009).*

Daily Express (London). "Britain Defenceless in the Air", 22 March 1923.

Daily Express (London). "Cities Open to Ruin", 24 March 1923.

Drury, Ian. "Could this be the end for the RAF? Military chief refuses to rule out merger with Navy as cuts loom." *Daily Mail (London)*, 4 February 2010.

Engen, Eric & Jonathan Skinner. "Taxation and Economic Growth," *National Tax Journal, Vol 49 No. 4, (December 1996).*

Ferris, John. "The Theory of a 'French Air Menace', Anglo-French Relations and the British Home Defence Air Force Programmes of 1921-25", *Journal of Strategic Studies 10, no. 1 (March 1997).*

Flight Magazine, No.583 (No 9 Vol XII), 26 February 1920.

Gray, Colin Gray. "Britain's National Security: Compulsion and Discretion", *RUSI Journal, Vol. 153, No. 6, (December 2008).*

Groves, PRC. "Our Future in the Air – England without a Defence", *Times (London)*, 24 April 1922.

Harding, Thomas "Harrier dispute between Navy and RAF chiefs sees Army 'marriage counsellor' called in," *Telegraph (London)*, 4 February 2009 http://www.telegraph.co.uk/news/newstopics/politics/defence/4448256/Harrier-dispute-between-Navy-and-RAF-chiefs-sees-Army-marriage-counsellor-called-in.html (accessed 26 May 2010).

Hollenbeck, J. R., Moon, H. Ellis, A . P. J., West, B. J., Ilgen, D. R., Sheppard, L., Porter, C. O. L. H., & Wagner, J. A. "Structural contingency theory and individual differences: Examination of external in internal person-team fit." *Journal of Applied Psychology, Volume 87, Number 3 (2002).*

Lusher, Adam, Stones, Adam Stones and Wynne-Jones, Jonathan. "Disband the RAF, says Iraq war's inspirational colonel." *Telegraph (London)*, 14 May 2006.

Mallinson, Allan. "Does Britain want an independent RAF?", *Telegraph (London)*, 1 April 2008, http://www.telegraph.co.uk/comment/3556788/Does-Britain-want-an-independent-RAF.html (accessed 18 November 2009).

Maslow, A.H., "A Theory of Human Motivation", *Psychological Review, vol 50, (1943).*

Meek, James. "In their minds, all they want to do is kill English soldiers", *Guardian (London)*, 14 October 2006.

New York Times, "British Criticize Air Attacks in Afghan Region," 9 August 2007. http://www.nytimes.com/2007/08/09/world/asia/09casualties.html?pagewanted=all (accessed 10 May 2010).

Observer (London). "Aircraft Carriers: Effect of Washington Restrictions", 15 January 1922.

Pall Mall Gazette and Globe, "Chaos in the Air Force – Present state of the Force a national peril," 5 January 1922.

Pall Mall Gazette and Globe, "Single Control the Vital Necessity," 5 January 1922.

Pall Mall Gazette and Globe, "The Navy must fly," 6 January 1922.

Rayment, Sean "General Sir David Richard's call for a review of the Armed Forces is timely", *Telegraph (London)*, 25 June 2009, http://www.telegraph.co.uk/comment/personal-view/5636460/General-Sir-David-Richards-call-for-a-review-of-the-Armed-Forces-is-timely.html (accessed 15 May 2010).

Robertson, David, "Eurofighters head towards Saudi Arabia as BAE completes £4.4bn order", *Times (London)*, 17 September 2007. http://business.timesonline.co.uk/tol/business/industry_sectors/engineering/article2477461.ece (accessed 10 April 2010).

Royal Marines Museum. "A short history of the Royal Marine Artillery." http://www.royalmarinesmuseum.co.uk/museumresearch/PDFs/A%20Short%20History%20Of%20The%20Royal%20Marine%20Artillery%201804-1923.pdf (accessed 10 May 2010).

Sengupta, Kim. "Awesome show of strength for 'minimum force'", *Independent (London)*, 16 May 2000. http://www.independent.co.uk/news/world/africa/awesome-show-of-strength-for-minimum-force-718974.html (accessed 19 May 2010).

Sengupta, Kim "Army chief leaps to defence of UK's Afghan mission Leaked complaints from frontline officers fighting in Helmand are 'irresponsible'", *Independent (London)*, 24 September 2006.

Smith, Michael. "Top Gun takes on Taliban upside down," *Times (London)*, 31 May 2009. http://www.timesonline.co.uk/tol/news/world/asia/article6395819.ece (accessed 19 May 2010).

Strachan, Hew. "One War, Joint Warfare", *RUSI Journal, Vol. 154, No. 4, (August 2009).*

Sweetman, John. "The Smuts Report of 1917: Merely Political Window Dressing?" *Journal of Strategic Studies, Vol 4, Issue 2 (1981).*

Telegraph (London). Letters, "Abolish the Royal Air Force to Make the Services More Efficient", 14 June 2009, http://www.telegraph.co.uk/comment/letters/5525262/Abolish-the-Royal-Air-Force-to-make-the-Services-more-efficient.html (accessed 19 November 2009).

Times (London). "Mullah's Overthrow – Dervishes scattered by aeroplanes," 19 February 1920.

Times (London). "Our Waning Air Power", 22 April 1922.

Times (London). "Change in headquarters organization. More details of Forces' future promised," 23 February 1968.

Sunday Express (London). "Forces Crisis? Get Rid of the Captain Darlings", 1 November 2009.

UK Ministry of Defence, Defence News, "Typhoon launches operationally for the first time", 21 August 2007, http://webarchive.nationalarchives.gov.uk/tna/+/http://www.mod.uk:80/DefenceInternet/DefenceNews/MilitaryOperations/TyphoonLaunchesOperationallyForTheFirstTime.htm (accessed 4 May 2010).

UK Ministry of Defence, Defence News, "Ministry of Defence sets the big questions for Strategic Defence Review", 3 February 2010. http://www.mod.uk/DefenceInternet/DefenceNews/DefencePolicyAndBusiness/ModSetsTheBigQuestionsForStrategicDefenceReview.htm (accessed 5 February 2010).

Weighill, Brigadier Rob. "Air/Land Integration – The View from Mars", *RUSI Defence Systems, February 2009.*

Wyatt, Caroline. "UK military chiefs fight for future of their services", BBC News, 19 January 2010, http://news.bbc.co.uk/2/hi/uk_news/8466970.stm (accessed 26 May 2010).

Books

Allen, R. E. ed. *The Concise Oxford Dictionary of Current English.* Oxford, UK: Oxford University Press, 1993.

Badsey, Stephen, Rob Havers, and Mark Grove ed. *The Falklands Conflict Twenty Years on: Lessons for the Future*. New York: Routledge, 2004.

Biddle, Tami Davis. *Rhetoric and Reality in Air Warfare.* Princeton, NJ: Princeton University Press 2002.

Boyle, Andrew. *Trenchard*. London, UK: Collins, 1962.

Builder, Carl H. *The Masks of War – American Military Styles in Strategy and Analysis*. Baltimore, MD: John Hopkins University Press, 1989.

Carter, Neil, Rudolf Klein, and Patricia Day. *How Organisations Measure Success: The Use of Performance Indicators in Government*. London, UK: Routledge, 1995.

Chapman, Richard A. *The Treasury in Public Policy-Making.* London, UK: Routledge, 1997.

Clausewitz, Carl von - *On War.* Edited and translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1984.

Cooper, Malcolm. *The Birth of Independent Air Power.* London, UK: Allen & Unwin, 1986.

Cordesman, Anthony H. *Peace and War: The Arab-Israeli Military Balance Enters the 21st Century.* Westport, CT: Praeger, 2002.

Corum, James S, and Wray R. Johnson. *Airpower in Small Wars: Fighting Insurgents and Terrorists*. Lawrence, Kansas: University Press of Kansas, 2003.

Dalton, Gene W, Paul R. Lawrence, and Jay W. Lorsch, eds. *Organizational Structure and Design*. Homewood, IL: Richard D. Irwin, 1970.

Donaldson, Lex. *The Contingency Theory of Organizations.* Thousand Oaks, CA: Sage Publications, 2001.

Farazmand, Ali, ed. *Modern Organizations: Theory and Practice*. Westport, CT: Praeger, 2002.

Gilpin, Robert. *Global Political Economy: understanding the international economic order*. Princeton, NJ: Princeton University Press, 2001.

Gooderson, Ian. *Air Power at the Battlefront: Allied Close Air Support in Europe 1943-45*. Portland, Oregon: Frank Cass Publishers, 1998.

Gray, Colin S. *Strategy for chaos: revolutions in military affairs and the evidence of history*. London, UK: Frank Cass, 2002.

Henriksen, Dag. *NATO's Gamble,Combining Diplomacy and Airpower in the Kosovo Crisis 1998-1999*. Annapolis, MD: Naval Institute Press.

Higham, Robin and Stephen J. Harris. *Why Air Forces Fail: The Anatomy of Defeat.* Lexington, KY: University Press of Kentucky, 2006.

Hofmann, David A. and Lois E. Tetrick, eds. *Health and Safety in Organizations: A Multilevel Perspective*. San Francisco: Jossey-Bass, 2003.

Hone Thomas C., Norman Friedman and Mark D. Mandales. *American & British Aircraft Carrier Development 1919-1941*. Annapolis, MD: Naval Institute Press, 2009.

Hore, Peter. *Seapower Ashore: 200 Years of Royal Navy Operations on Land*. London, UK: Chatham Publishing, 2001.

Horwood, Dr Ian. *Interservice Rivalry and Airpower in the Vietnam War*. Fort Leavenworth, Kansas: CSI Press, 2006.

Hurley, Alfred F. *Billy Mitchell: Crusader for Air Power*. Bloomington, IN: Indiana University Press, 1975.

Janis, Irving L. *Groupthink.* Boston, MA: Houghton Mifflin, 1982.

Macy, Ed, Apache. Inside *the Cockpit of the World's Most Deadly Fighting Machine.* New York, NY: Atlantic Monthly Press, 2008.

Mahan, Rear Admiral Alfred Thayer and John B. Hattendorf ed. *Mahan on Naval Strategy: Selections from the Writings of Rear Admiral Alfred Thayer Mahan.* Annapolis, MD: Naval Institute Press, 1991.

Miner, John B. *Organizational Behavior: Foundations, Theories, and Analyses*. Oxford: Oxford University Press, 2002.

Morgan, Gareth. *Images of Organization*. Thousand Oaks, CA: Sage Publications, 2006.
Morison, Frank. *War on Great Cities: A Study of the Facts*. London, UK: Faber & Faber, 1937.
Murray, Williamson and Millett, Allen ed. Military Innovation in the Interwar Period. New York, NY: Cambridge University Press, 2008.
O'Brien, Phillips Payson. *British and American Naval Power: Politics and Policy, 1900-1936*. Westport, CT: Praeger, 1998.
Overy, Richard. *The Battle of Britain – The Myth and the Reality*. New York, NY: W.W Norton and Company, 2002.
Pape, Robert A. *Bombing to Win: Air Power and Coercion in War*. Ithaca, NY: Cornell University Press, 1996.
Pfeffer, Jeffrey. *New Directions for Organization Theory: Problems and Prospects*. New York: Oxford University Press, 1997.
Rainey, Hal G. *Understanding and managing public organizations*. San Francisco, CA: Jossey-Bass, 1997.
Rawlinson, A. *The Defence of London 1915-1918*. London, UK: Andrew Melrose Ltd., 1924.
Roskill, Steven Wentworth. *Admiral of the Fleet Earl Beatty: The Last Naval Hero*. New York, NY: Atheneum, 1981.
Scott, W. Richard. *Organizations: Rational, Natural and Open Systems*. Englewood Hills, New Jersey:Prentice-Hall, 1981.
Sims, Charles. *The Royal Air Force: The First Fifty Years*. London, UK: Adam & Charles Black, 1968.
Slessor, Wing Commander J. C. *Air Power and Armies*. Tuscaloosa, AL: University of Alabama Press, 2009.
Smith, General Rupert. *The Utility of Force – The Art of War in the Modern World*. New York, NY: Vintage Books, 2008.
Smith, Malcolm. *British Air Strategy Between the Wars.* Oxford, UK: Oxford University Press, 1984.
Stanik, Joseph T. *El Dorado Canyon: Reagan's Undeclared War with Qaddafi*. Annapolis, MD: Naval Institute Press, 2003.
Strassler, Robert B. ed. *The Landmark Thucydides – A Comprehensive Guide to the Peloponnesian War.* New York, NY: Free Press, 1996.
White, Rowland, *Vulcan 607 – The Epic Story of the Most Remarkable British Air Attack since WWII.* London, UK: Bantam Press, 2006.
Wood, Derek, and Derek D. Dempster. *The Narrow Margin: The Battle of Britain and the Rise of Air Power 1930-40*. London, UK: Hutchinson, 1961.

Briefings/Point Papers/Memos/Messages

Boyd, John R., "Organic Design for Command and Control" from "A Discourse on Winning and Losing" presentation, August 1987. Reader produced for USAF School of Advanced Air and Space Studies course 600. Original May 1987 versions signed by Boyd available at http://www.danford.net/boyd/organic.pdf (accessed 3 May 2010).

Declassified Taliban communications. Briefing to USAF School of Advanced Air and Space Studies, Maxwell AFB on 13 April 2010.

Thompson, Squadron Leader Robert W. "Officer Qualities." *North Atlantic Treaty Organization, Research and Technology Organization, Meeting Proceedings 55, Officer Selection, Paper 24,* 2000. http://ftp.rta.nato.int/Public/PubFullText/RTO/MP/RTO-MP-055/MP-055-$$TOC.PDF (accessed 20 February 2010).

Government Documents

Hansard, House of Commons Debate, 21 February 1922, Volume 150, cc1735-6W.

Hansard, House of Commons Debate, 1 March 1922, Volume 151, cc372-3.

Hansard, House of Commons Debate, 2 March 1922, Volume 151, cc536-7 and cc537-8.

Hansard, House of Commons Debate, 6 March 1922 Volume 151, c841.

Hansard, House of Commons Debate, 08 March 1923, Volume 161, cc711-3.

Hansard, House of Commons Debate, 16 March 1922, Volume 151, cc2457-68 & cc2469-528.

Hansard, House of Commons Debate, 23 April 1998, Volume 310, cc979-94.

Hansard, House of Commons Debate, 30 April 1991, Volume 190, cc147-148W.

Hansard, House of Commons Debate, 22 June 1922, Volume 155, cc1487.

Hansard, House of Commons Debate, 3 August 1922, Volume 157, cc1661-3.

Hansard, House of Commons, Notices of Motion, 15 February 1922, Volume 150 c1023.

Hansard, House of Lords Debate, 27 October 1921, Volume 47, cc99-110.

Hansard, House of Lords Debate, 21 March 1923, Volume 53, cc470-511.

HM Revenue and Customs, "Number of Taxpayers and Registered Traders." http://www.hmrc.gov.uk/stats/tax_receipts/table1-4.pdf accessed 10 May 2010

HM Treasury "UK Spending Reviews 1998-2007". http://www.hm-treasury.gov.uk/spend_index.htm (accessed 5 May 2010).

Secretary of State for Defence, *Adaptability and Partnership: Issues for the Strategic Defence Review*. Norwich, UK: TSO, February 2010.

Stewart, Richard W. *Operation Enduring Freedom: The United States Army in Afghanistan, October 2001-March 2002*. US Army Center for Military History, CMH Pub 70-83-1, 2004.

UK Cabinet Office, *The National Security Strategy of the United Kingdom: Security in an Interdependent World*, Norwich, UK: HMSO, March 2008.

UK Cabinet Office, *The National Security Strategy of the United Kingdom: Update 2009 – Security for the Next Generation*, Norwich, UK: TSO, June 2009.

UK Cabinet Office and HM Treasury, "Principles of Managing Risks to the Public", http://www.hm-treasury.gov.uk/d/Risk_Principles_with_logos_final.pdf

UK Debt Management Office figures. http://www.dmo.gov.uk/index.aspx?page=About/treasury_history, accessed 20 April 2010.

UK Health and Safety Executive Statistics. http://www.hse.gov.uk/prosecutions/breach/breach_list.asp?PN=1&ST=B&EO=%3D&SN=P&x=41&SF=ACT&SV=491&y=21&SO=DHD (accessed 8 May 2010).

UK Ministry of Defence, "2010-2011 Ministry of Defence Departmental Spending Limit". http://www.mod.uk/defenceinternet/aboutdefence/organisation/keyfactsaboutdefence/defencespending.htm (accessed 10 May 2010).

UK Ministry of Defence, "Agencies and Organisations", http://www.mod.uk/DefenceInternet/AboutDefence/Organisation/AgenciesOrganisations/ (accessed 6 May 2010).

UK Ministry of Defence, Air Staff, *AP3000 – British Air and Space Power Doctrine – Fourth Edition.* London: Air Media Centre, HQ Air Command, 2009.

UK Ministry of Defence, Defence Analysis and Statistics Agency, "Defence Personnel Overview". http://www.dasa.mod.uk/modintranet/dp/index.php?c=2&s=1&l=english&m=english (accessed 23 March 2010).

UK Ministry of Defence, *Interim Joint Warfare Publication 3-30 - Joint Air Operations*, Swindon, UK: Joint Doctrine & Concepts Centre, October 2003.

UK Ministry of Defence, *Joint Doctrine Publication JDP 01,* Second Edition. Swindon, UK: Defence Doctrine and Concepts Centre, 2008.

UK Ministry of Defence, "UK Defence Vision". http://www.mod.uk/DefenceInternet/AboutDefence/Organisation/DefenceVision/ (accessed 9 May 2010).

UK National Archives, CAB 23/3, Minutes of a Meeting of the War Cabinet held at 10, Downing Street, S.W., on Wednesday, July 11, 1917, at 1130 AM.

UK National Archives, CAB 23/3, Minutes of a Meeting of the War Cabinet held at 10, Downing Street, S.W., on Friday, August 24, 1917, at 1130 AM.

UK National Archives CAB 24/78, The military situation throughout the British Empire, with special reference to the Inadequacy of the numbers of troops available, by Sir Henry Wilson, 26 April 1919.

UK National Archives CAB 24/90, Royal Air Force Estimates, 24th October 1919.

UK National Archives CAB 24/106, Mesopotamian Expenditure: Memorandum by the Secretary of State for War, 1st May 1920, Appendices.
UK National Archives CAB 24/126, Report of the Cairo Conference, June 1921, Section II, Appendix 13.
UK National Archives CAB 23/26, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, SW., on Thursday,18th August, 1921, at 1130 am.
UK National Archives CAB 24/131, Interim Report of Committee on National Expenditure by Sir Eric Geddes, 14 December 1921.
UK National Archives, CAB 24/132, Proposal to Transfer the Functions of the Air Ministry to the War Office: Memorandum by the Secretary of State for War, Relations between the Navy and the Air Force: Memorandum by the Admiralty, 4 February 1922.
UK National Archives, CAB 23/132, Report of Committee Appointed to Examine Part I (Defence Departments) of the Report of the Geddes Committee on National Expenditure, 4 February 1922.
UK National Archives, CAB 24/132, Relations between the Navy and the Air Force: Memorandum by the Admiralty, 6 February 1922.
UK National Archives, CAB 24/133, The Part of the Air Force of the Future in Imperial Defence, 17 February 1922.
UK National Archives, CAB 23/29, Conclusions of a Meeting held at 10, Downing Street, S.W. on Wednesday, March,8th, 1922, at 12 Noon.
UK National Archives, CAB 23/29, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W., on Wednesday, 15th March 1922, at 11 AM.
UK National Archives, CAB 24/136, Developments in French Air Force – Memorandum by the Secretary of State for Air, 24 March 1922.
UK National Archives, CAB 23/30, Conclusions of a meeting of the Cabinet, held at 10, Downing St., S.W.1, on Thursday,3rd August, 1922, at 1130 AM.
UK National Archives CAB 24/162, Report of Sub-Committee on National and Imperial Defence, 15 November 1923.
UK National Archives, CAB 24/161, The Control of Naval Air Work: Memorandum by the First Lord of the Admiralty, 26 March 1923.
UK National Archives, CAB 23/45, Conclusions of **a** Meeting of the Cabinet, held at 10, Downing Street, S.W.1, on Wednesday, March 7, 1923, at 1130 AM.
UK National Archives, CAB 23/45, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W.1 on Wednesday, May 9, 1923 at 1130 AM.
UK National Archives, CAB 24/160, National and Imperial Defence Sub-Committee of the Committee of Imperial Defence: Interim Report (CP 270(23)), 12 June 1923.
UK National Archives, CAB 24/160, The Expansion of the Royal Air Force for Home Defence, 15 June 1923.
UK National Archives, CAB 23/46, Conclusions of a Meeting of the Cabinet, held at 10, Downing Street, S.W.1 on Wednesday, June 20, 1923, at 1130 AM.
UK National Archives, CAB 24/160, The Relative Status of the Army and the Royal Air Force: Memorandum by the Secretary of State for War, 28 June 1923.

UK National Archives, CAB 24/160, The Relations of the Army and the Royal Air Force: Memorandum by the Chairman of the Sub-Committee of the Committee of Imperial Defence on National and Imperial Defence, 30 June 1923.
UK National Archives, CAB/24/161, The Relations of the Army and the Royal Air Force: Memorandum by Sir Laming Worthington-Evans, 3 July 1923.
UK National Archives, CAB 24/161, The Separate Existence of the Royal Air Force and the Air Ministry Scheme of Expansion for Home Defence: Memorandum by the Secretary of State for Air, 6 July 1923.
UK National Archives, CAB 23/46, Conclusions of a Meeting of the Cabinet held at 10, Downing Street, S.W. 1 on Monday, 9th July, 1923, at 1130 AM.

Personal Communications – Interviews/E-Mails

RAF, UK. Air Command. Resource Management Hub. E-Mail from Head of Central Analysis Team on 21 May 2010.
RAF, UK. Air Command. Telephone conversations with Head of Resource Management Hub, on 19, 20 and 26 May 2010.
RAF, UK. Headquarters 22 (Training) Group. E-Mail from SO1 SPP on 18 May 2010.
RAF, UK. Integrated Typhoon Operations Centre, Headquarters 1 Group. E-Mail from SO3 Eng on 19 May 2010.

Reference Databases

Janes, *All the World's Aircraft*, "UK, Eurofighter Typhoon", http://www4.janes.com/subscribe/jawa/doc_view.jsp?K2DocKey=/content1/janesdata/yb/jawa/jawa0478.htm@current&Prod_Name=JAWA&QueryText=#toclink-j0010120062334, (accessed 12 April 2010).
Public Spending Chart for UK 1900-2011. http://www.ukpublicspending.co.uk/downchart_ukgs.php?chart=G0-total&year=1900_2011&units=p (accessed 3 May 2010).

Reports

House of Commons Defence Committee, *Fourth Report of Session 2001-02*. London, UK: The Stationary Office, 2003.
House of Commons Treasury Committee, *Evaluating the Efficiency Programme – Thirteenth Report of Session 2008-09*. London, UK: The Stationary Office, 2009.
Right Honourable Paul Murphy MP. *Intelligence and Security Committee Report into the London Terrorist Attacks on 7 July 2005*, Norwich, UK: HMSO, May 2006.

Speeches

Air Chief Marshal Sir Christopher Moran, Commander-in-Chief UK Air Command, "Sir Sydney Camm Lecture 2009", speech to The Royal Aeronautical Society, 1 July 2009. Transcript at http://www.raf.mod.uk/rafcms/mediafiles/79E7D4A9_5056_A318_A8FECDC85BBA26B8.doc (accessed 23 March 2010).

Chief of the Defence Staff. Oral evidence to the House of Commons Defence Committee, 6 March 2007. http://www.publications.parliament.uk/pa/cm200607/cmselect/cmdfence/uc381-i/uc38102.htm (accessed 14 May 2010).

General Sir Richard Dannet, "The Land Environment – Moving Towards 2018", Speech at RUSI Land Warfare Conference 12 June 2008.

Right Honourable Robin Cook MP, Foreign Secretary, "Ethical Foreign Policy", Speech at UK Foreign Office, 12 May 1997. Transcript at http://www.guardian.co.uk/world/1997/may/12/indonesia.ethicalforeignpolicy (accessed 9 May 2010).